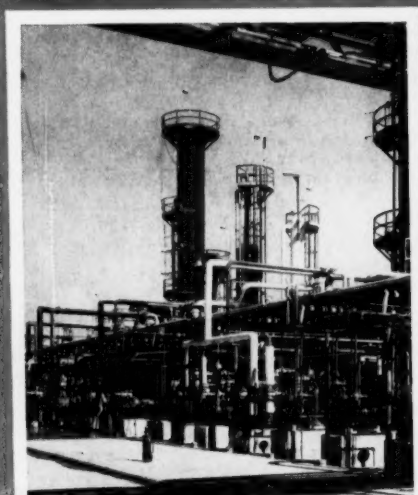


# Chemical Week—

April 26, 1952

Price 35 cents



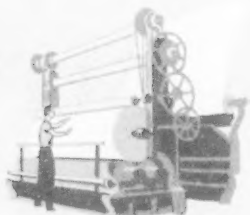
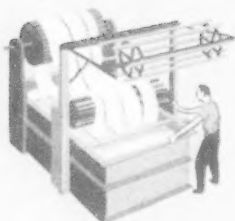
Planners shake down expansion goals; from now on they won't say yes so often . . . . . p. 11

Five fat years for the process industries; outlook: more of the same . . . . . p. 16

◀ Process merger spells profits; Platformer makes aromatics, Udex separates them . . . . p. 31

◀ Drug packaging; a program to lick container shortages leads to a money-saving overhaul . p. 40

Liquids in the limelight; \$15 million market—up 43-fold in 4 years—is detergent tale . . p. 47



## Solvay Technical Service

is **DIFFERENT**

What business are you in—glass? . . . paper? . . . textiles? No matter what industry you are engaged in, it's important for you to know about this *different* type of technical service.

The staff members of SOLVAY TECHNICAL SERVICE are field experts who have spent their entire careers specializing in individual industries; they are thoroughly versed in alkali chemistry and its uses in these industries. When you call on SOLVAY TECHNICAL SERVICE for assistance, you can be sure that you will get the services of a man who knows *your* industry . . . its methods . . . its problems.

There's no charge or obligation for the services of these "individual industry" specialists. For further information, write in confidence to the nearest SOLVAY office.

### SOLVAY SALES DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 Regor Street, New York 6, N. Y.

BRANCH SALES OFFICES:

Boston • Charlotte • Chicago • Cincinnati • Cleveland • Detroit • Houston  
New Orleans • New York • Philadelphia • Pittsburgh • St. Louis • Syracuse

**SOLVAY**  
ALKALIES & CHEMICALS  
Since 1881

Soda Ash  
Caustic Soda  
Caustic Potash  
Chlorine  
Potassium Carbonate  
Calcium Chloride  
Sodium Bicarbonate  
Specialty Cleansers  
Sodium Nitrite  
Nytrol  
Ammonium Bicarbonate  
Para-dichlorobenzene  
Ortho-dichlorobenzene  
Monochlorobenzene  
Methanol  
Ammonium Chloride  
Formaldehyde

#### TECHNICAL LITERATURE AVAILABLE

Solvay Technical Bulletins are authentic, reliable sources of information that are used by many operating plants and research laboratories throughout the country. They are available to industrial and educational institutions in the U. S. and Canada only on request, without obligation.

#### BULLETIN

No. 5—Soda Ash  
No. 6—Caustic Soda  
No. 7—Liquid Chlorine  
No. 8—Alkalies and Chlorine in the Treatment of Municipal and Industrial Water

No. 9—Analysis of Alkalies  
No. 11—Water Analysis  
No. 12—The Analysis of Liquid Chlorine and Bleach  
No. 14—Chlorine Bleach Solutions  
No. 16—Calcium Chloride

# Chemical Week

Volume 70      Number 17  
April 26, 1952

OPINION	2
NEWSLETTER	7
BUSINESS & INDUSTRY	11
RESEARCH	23
PRODUCTION	30
DISTRIBUTION	40
BOOKS	44
MEETINGS	44
SPECIALTIES	47
MARKETS	53
BOOKLETS	60

PUBLISHER ..... Wallace F. Traendly  
EDITORIAL DIRECTOR ..... S. D. Kirkpatrick  
EDITOR ..... W. Alec Jordan  
MANAGING EDITOR .. Howard C. E. Johnson  
ASSOCIATE EDITOR ..... John J. Craig

ASSISTANT EDITORS: Donald P. Burke, Joseph Gordon, Dennis J. Lynds, William Olcott, Ralph R. Schulz. REGIONAL EDITORS: Frank C. Byrnes, Chicago; John Kent, Washington; James A. Lee, Houston; Elliot Schrier, San Francisco. ART EDITOR: Woodfin G. Mizell, Jr. EDITORIAL ASSISTANTS: Claire Baker, Leona Mahler, J. R. Warren. DOMESTIC AND FOREIGN NEWS SERVICE: McGraw-Hill Bureaus in principal cities of the U.S. and throughout the world. CONSULTING EDITORS: Lawrence W. Bass, Benjamin T. Brooks, John V. N. Dorr, Charles R. Downs, Ernest W. Reid, Norman A. Shepard, Roland P. Soule, Robert L. Taylor. BUSINESS STAFF & REGIONAL OFFICES: See page facing back cover.



Chemical Week (including Chemical Specialties, and Chemical Industries) is published weekly by McGraw-Hill Publishing Company, Inc., James H. McGraw (1860-1948), Founder. Publication Office: 1309 Noble St., Philadelphia 23, Pa.

Executive, Editorial and Advertising Offices: McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y. Curtis W. McGraw, President; Willard Chevalier, Executive Vice-President; Joseph A. Gerardi, Vice-President and Treasurer; John J. Cooke, Secretary; Paul Montgomery, Senior Vice-President, Publications Division; Ralph B. Smith, Editorial Director; Nelson Bond, Vice-President and Director of Advertising; J. E. Blackburn, Jr., Vice-President and Director of Circulation.

Subscriptions to Chemical Week are solicited in the chemical and process industries from management men in administration, research, production and distribution. Position and company connection must be indicated on subscription order. Address all subscription communications to Chemical Week Subscription Service, 330 W. 42nd St., New York 36, N. Y. Allow ten days for change of address.

Single copies 35c. Subscription rates—United States and Possessions \$5.00 a year; \$8.00 for two years; \$10.00 for three years. Canada \$6.00 for a year; \$10.00 for two years; \$12.00 for three years. Other Western Hemisphere Countries \$15.00 a year; \$25.00 for two years; \$30.00 for three years. All other countries \$25.00 a year; \$40.00 for two years; \$50.00 for three years. Entered as second class matter December 20, 1951, at the Post Office at Philadelphia 23, Pa., under the Act of March 3, 1879. Printed in U.S.A. Copyright 1952 by McGraw-Hill Publishing Co., Inc.—All Rights Reserved.

April 26, 1952 • Chemical Week

# NEW PRODUCTS?

## SURVEY

*The Possibilities of  
Developing  
NEW PRODUCTS*

through the  
versatility  
of



# SEBACIC ACID

For Information Write:

# HARDESTY

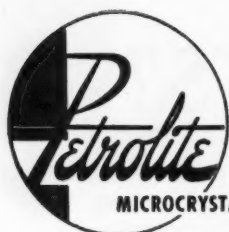
CHEMICAL COMPANY, INC.

# HARCHEM

41 EAST 42nd ST.      NEW YORK 17, N. Y.

Canadian Distributor: W. C. Hardesty Co. of Canada Ltd.,  
975 Lakeshore Road, New Toronto, Canada





MICROCRYSTALLINE

## WAXES

have a wide utility wherever the demand is for a high quality wax with the following advantageous physical characteristics:

**PURITY**  
**LOW COST**  
**LOW TACK**  
**UNIFORMITY**  
**LOW PENETRATION**  
**HIGH COMPATIBILITY**  
**HIGH MELTING POINT**  
**HIGH EMULSIFIABILITY**

NOTE THESE PETROLITE SPECIFICATIONS

Petrolite Wax	Melting Point °F	Penetration 100 g., 5 sec.	Color N.P.A.	Acid Number	Sapon. Number
200	130/185	10 max.	Brown	Nil	Nil
500	130/185	10 max.	2 to 2½	Nil	Nil
700	130/185	5 max.	2 to 2½	Nil	Nil
1035	195/200	2 max.	2 to 2½	Nil	Nil
*23	190 min.	4 to 6	4 to 5	20-25	55-65
*38	190 min.	5 to 7	5 to 6	30-35	75-85

\*Emulsifiable Waxes.

You are invited to make your own comparisons. Free samples, technical data and complete information are yours for the asking.

**PETROLITE**

**Crown WAXES**

PETROLITE CORPORATION, LTD.

WAX DIVISION

30 BROAD STREET, NEW YORK 4, N. Y.  
BOX 390, KILGORE, TEXAS

WS1/3-8

# OPINION . . . . .

## It's Still News

TO THE EDITOR: Your story about ethylenediamine tetraacetic acid in cold rubber (April 5) is interesting but old. Use of Sequestrene in low-temperature polymerization was described years ago in a series of papers by Polymer Corp. (Sarnia) chemists. Product is not used as a water softener but actually iron complex of Sequestrene acts as polymerization catalyst. Recent U.S. Rubber patent 2,560,741 describes use of EDTA as iron scavenger in polyethylenamine activated cold-rubber polymerization; this is a somewhat different sort of application and in this case, Sequestrene is used as a sodium salt.

Actually, ethylenediamine tetraacetic acid has been used commercially in synthetic rubber polymerization, in synthetic latex and in natural latex for several years—and by a number of companies in addition to Goodrich. An interesting possibility in the offing and well recognized in the business is continuous polymerization with use of EDTA iron catalyst.

H. W. ZUSSMAN  
Vice President  
Alroese Chemical Co.  
Providence, R. I.

*When a major rubber producer adopts a process, that's news—and that was the point of our story. Goodrich started experiments in 1949, put the technique into production just recently. Goodrich reports that it is using Versene, has evaluated Sequestrene and found it to be as good. We relied on Goodrich's data as regards method of use and benefits resulting therefrom.—Ed.*

## Saran for Foods

TO THE EDITOR: In your article on vinyls (Mar. 22) you say, "Vinyl film can't match polyethylene for packaging frozen foods and fresh vegetables since the latter has near-ideal vapor transmission rates." We feel sure you recognize the vapor transmission properties of a film necessary for packaging frozen foods is a great deal different from that for fresh vegetables.

Polyethylene, by virtue of its ability to "breathe" has been used as a packaging material for some vegetables; for some other vegetables it has been necessary to perforate polyethylene to allow more rapid transmission of gases.

For packaging frozen foods, polyethylene is not so widely used as might be inferred from your remarks. While it does have excellent low-temperature characteristics, its moisture-vapor transmission rate compares poorly

with some of the vinylidene copolymers, viz., Saran.

For some years we have been manufacturing a Saran-type material known as Cry-O-Rap, widely used in the food industry for packaging smoked meats and frozen poultry.

Perhaps this is by way of suggestion that vinyl films or vinylidene films are more applicable, serviceable and practical for food packaging than your comments indicate.

T. G. GIBIAN  
Dewey and Almy Chemical Co.  
Cambridge, Mass.

*CW compared polyethylene with vinyls, certainly intended no implication that the quite-different Saran-type films were not of great merit in packaging frozen foods. Indeed, special cellophanes, Pliofilm, various coated papers and fibre cans—as well as polyethylene, vinyls and vinylidenes—all have particular advantages for certain food packaging applications.—Ed.*

## Stable Nitrates

TO THE EDITOR: This is in reference to your statement (Newsletter, Apr. 5) . . . "sodium nitrate for fertilizer use is 6,000 tons shorter this week as a result of an explosion-fire in two dockside Savannah warehouses . . ."

The precise cause of the fire has not yet been established . . . it occurred in a building in which Chilean nitrate has been stored for many years in quantities up to 50,000 tons. It started on the roof . . . at a point fully 50 feet from the pile of nitrate.

. . . About 4,000 tons of nitrate is being reclaimed . . . the remainder . . . was washed away or dissolved or will be wet and damaged. There were undoubtedly some puffs of nitrate as a result of water and air seeping into the pile but there were no explosions of nitrate . . .

Nitrate contributes to and intensifies a fire once it has started . . . has never been known to explode . . . in bulk is not self-inflammable.

J. F. DOETSCH  
President  
Chilean Nitrate Sales Corp.  
New York, N. Y.

TO THE EDITOR: In your Apr. 5th issue the statement is made, in referring to calcium ammonium nitrate: "The material—world-famous since its near cousin's Texas City performance—is definitely on the Coast Guard's black-list of materials that need special treatment."

It is true that calcium ammonium





## IS SHE WORTH HER SALT ?

She requires tons and tons every year!

That aluminum-backed mirror, the plastic jars, the lipstick tissue, the glass lamps, and even the lovely gown of rayon sheer—in fact everything around her—is made from or with the help of a chemical derived from salt.

When the pioneers captured the Ohio salt lands from the Indians, salt sold for a cow and a calf a bushel, it was so scarce. Today one plant of DIAMOND ALKALI is over a salt layer so thick that it is inexhaustible for many generations. Which is fortunate, because practically any industry you can name uses, directly or indirectly, caustic soda or soda ash or chlorine, all made from salt by DIAMOND. Consequently, the present expansion of industries becomes an enormously enlarged market for DIAMOND.

THIS ADVERTISEMENT is one of a series appearing in Time, Newsweek and Fortune to broaden public understanding of the part chemicals play in everyday life.



*Chemicals you live by...* **DIAMOND ALKALI COMPANY** CLEVELAND, OHIO  
SODA ASH • CAUSTIC SODA • CHLORINE & DERIVATIVES • BICARBONATE OF SODA • SILICATES • CALCIUM COMPOUNDS • CHROME COMPOUNDS • ALKALI SPECIALTIES



## HERE'S TO THE HEALTH OF AMERICA

The development of new "wonder drugs" ranks high among recent advances achieved by chemical and medical research. Thanks to the chemical industry, Americans today enjoy better health, better products, better living. There is scarcely an individual or an industry that has not benefited from the progress made in chemistry.

Sound financing frequently has supported significant advances in chemical productivity. Guaranty Trust Company, as a recognized leader in banking, has provided such assistance for many years.

In addition to direct financing, we act as registrar and transfer agent for corporate securities, as trustee of bond issues and pension trusts, and in other related capacities. Our officers will be glad to serve you.

## Guaranty Trust Company of New York

**Capital Funds \$380,000,000**

140 Broadway, New York 15

Fifth Ave. at 44th St.  
New York 36

Madison Ave. at 60th St.  
New York 21

Rockefeller Plaza at 50th St.  
New York 20

London

Paris

Brussels

*Member Federal Deposit Insurance Corporation*

## OPINION . . . . .

nitrate is on the Coast Guard's list, but perhaps this is due more to ignorance on their part than anything else. . . . The inference, by referring to calcium ammonium nitrate as a near cousin to Texas City's performer, is . . . highly misrepresentative of the facts. What caused the trouble in Texas City was ammonium nitrate fertilizer. . . .

There are no known instances where calcium ammonium nitrate has ever caused an explosion, fire, or even contributed to it. . . .

I also disagree with "world-famous since it's near cousin . . ." Calcium ammonium nitrate prior to Texas City had become world-famous because of its nonexplosive and fire-resistant properties. . . .

For almost twenty years prior to Texas City this material had been shipped and handled in bulk and in bags by ocean-going vessel and . . . in rail transportation in the U. S. without requiring any I.C.C. labeling or restrictions such as are applicable to ammonium nitrate fertilizer and nitrate of soda.

M. TEGTMEYER

Exec. Vice Pres. & Secy.

Synthetic Nitrogen Products Corp.

New York, N. Y.

*Thanks, Readers Doetsch and Tegtmeier for a further delineation of the nitrates picture. CW, aware of the chemical characteristics of both sodium and calcium ammonium nitrates, submits that its use of the terse term "explosion-fire" (modified from an on-the-spot reporter's dispatch of "atomic-like explosion") may have conveyed an unfortunate implication. We are glad, too, to know that a good deal of the sodium nitrate will be recovered; at fire time officials at the scene pessimistically reported that all was destroyed.*

*Our parenthetical phrase—"World-famous since its near-cousin's Texas City performance"—was used merely to emphasize the distrust of all nitrates which has been engendered, reasonably or otherwise, by the Texas City disaster. The Coast Guard embargo on unloading calcium ammonium nitrate at North Carolina ports, which was the subject of the report in question, is but one of the resultant restrictions.—Ed.*

CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

Address all correspondence to: The Editor, Chemical Week, 330 W. 42nd St., New York 36, N. Y.

# HOOKER

can save you time and money on

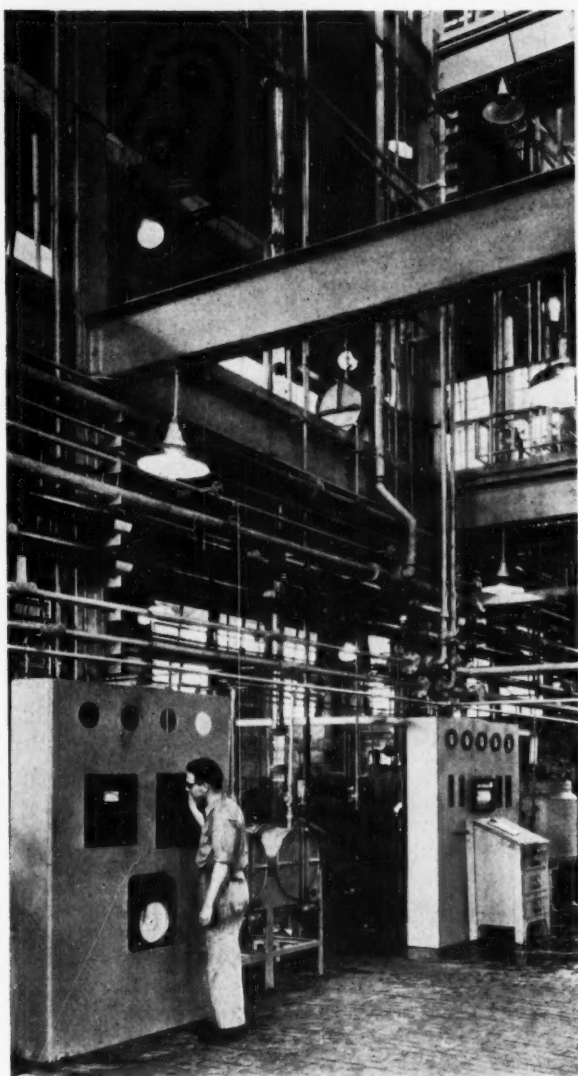
## CHLORINATING AGENTS

Many manufacturers find it costs less—and takes less time—to buy chlorinating agents “ready-made” from Hooker.

You can get prompt delivery *now* on most of the standard Hooker chlorinating agents listed here. Others will be available soon.

You’ll like the way Hooker helps you meet production deadlines. Shipments are scheduled to tie in closely with your needs.

To get the facts on typical Hooker chlorinating agents, ask for Bulletin No. 328A, and for Technical Data Sheets on the specific chemicals you need. Please request them on your business letterhead.



HOOKER PILOT PLANT at Niagara Falls is used for developing chlorination and other processes to commercial scale.

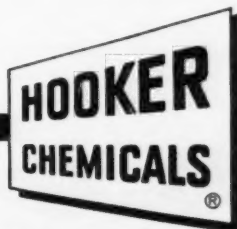
**THESE HOOKER CHLORINATING  
AGENTS ARE SUPPLIED TO THE  
CHEMICAL PROCESSING INDUSTRIES**

- CHLORINE
- MURIATIC ACID
- SULFUR MONOCHLORIDE
- SULFUR DICHLORIDE
- SULFURYL CHLORIDE
- THIONYL CHLORIDE

*From the Salt of the Earth*

**HOOKER ELECTROCHEMICAL COMPANY**

3 FORTY-SEVENTH ST., NIAGARA FALLS, N. Y.  
NEW YORK, N. Y. • WILMINGTON, CALIF. • TACOMA, WASH.

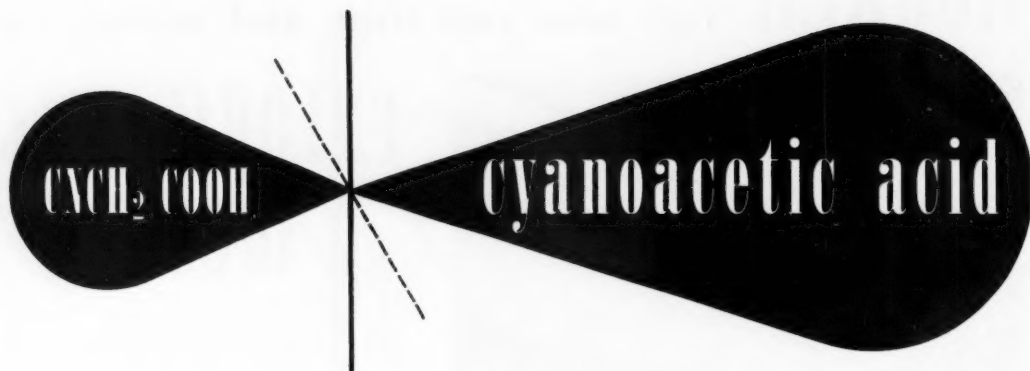


1-1729

SODIUM SULFIDE • SODIUM SULFHYDRATE • SODIUM BENZOATE • CAUSTIC SODA • BENZOIC ACID • ALUMINUM CHLORIDE • SULFUR CHLORIDE

April 26, 1952 • Chemical Week

# KAY-FRIES...

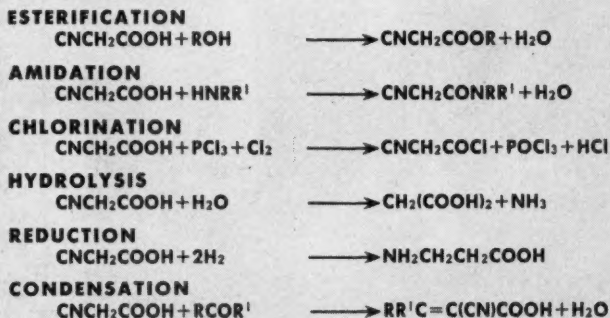


Cyanoacetic Acid is an intermediate for amino acids, barbiturates, dyes, the purine group, vitamins and other drugs. Chemically, its "cyano-activated" methylene group and easily hydrolyzed cyano group are particularly interesting.

## KAY-FRIES SPECIFICATIONS

- assay** • 98.0% min. (by acidity and hydrolysis) Kay-Fries CYANO-ACETIC ACID is exceptionally uniform in purity with water accounting for substantially all of the remaining 2.0%.
- color** • 75 Hazen scale (10 g. of acid in 50cc dist. H<sub>2</sub>O).
- ash** • .075% maximum.

## Typical reactions of CYANOACETIC ACID



## TECHNICAL BULLETIN AVAILABLE

Write or Phone

American-British Chemical Supplies, Inc.

Selling Agents For

**KAY-FRIES CHEMICALS, INC.**

180 Madison Avenue, New York 16, N. Y. MUrray Hill 6-0661



Plant—West Haverstraw, N. Y.



## NEWSLETTER

The early crop of first-quarter reports is blighted. Chief predator is Federal taxes, but that's not the whole story. Sales have by and large remained constant; and in the face of rising production costs, many pre-tax earnings have eased.

Rohm & Haas, Devoe & Raynolds, and Kaiser Aluminum suffered sales setbacks (11%, 19%, 24%, respectively); profits tumbled even more (36%, 91%, not available, respectively).

Du Pont's and Union Carbide's sales were almost the same as last year's first quarter; earnings aren't available yet. Industrial Rayon shows no sales figures, but net after taxes was down only 1%.

Dow Chemical showed, for nine months, a flashy 25% sales boost. But the earnings-after-taxes figure—down 12½%—proves that it hardly pays to get up in the morning.

Diamond Alkali's net was down slightly—even after acquisition of Kolker Chemical, which it didn't own in 1951's comparable quarter.

The company last week halted construction on its \$12 million Painesville expansion. Part of the reason: to allow replanning, shifting some of the proposed facilities to Houston.

But remarks of President Raymond F. Evans at the stockholders' meeting last week suggest an additional reason: "First-quarter results reflect a continuance of . . . depressed demand in the consumer goods industry, particularly the textile, glass, leather, soap and detergents trades."

Does all this add up to a recession? Neither in the thinking of industrialists nor of Washington economists.

They ascribe it to election-year jitters—inability to make firm plans when November may mark a shift in national policy, uncertainty about next year's taxes and next year's procurements, possibility of a further stretch in the defense stretch-out.

All agree that purchasing power, though latent, is potent—that for the long pull the planners' expansion goals (see p. 11) are within the scope of reasonable expectations.

Helping to meet these long-range goals will be the certificates of necessity just issued by DPA. Among the over-\$1 million:

U. S. Steel and Tennessee Coal, naphthalene; Stauffer Chemical, carbon tetrachloride; Dow, plasticizers; Monsanto, oil additives; Ethyl Corp., antiknock compounds; Sun Oil, acid oils.

Smaller certificates went to Oronite, oil additives; General Aniline & Film, carbonyl iron powder; and Stanley Works, iron sulfate.

Mutual Security Agency (Marshall Plan successor), meanwhile, is bolstering foreign demand for chemicals and specialty products.

With a starter of \$78,000 to buy insecticides, fungicides and rodent poisons, MSA is helping the Philippines launch a cereal pest control program. It may easily get bigger.

And MSA has granted purchase authorizations to France to the tune of \$3½ million. The tally: \$2 million for carbon black, \$523,000 for chemicals and chemical preparations, \$400,000 for industrial chemicals, \$500,000 for synthetic rubber.

Sometime next month you can start looking for the Delaney committee reports. First one, on fertilizers, is scheduled for issue about mid-May; others—on foods, cosmetics, pesticides—will follow.

The committee can only recommend legislation. Few if any legislative proposals are expected on fertilizers; except to the organic gardeners there was little to cavil about. One possibility: recommendation that fertilizer be labeled in terms of elements rather than their oxides.

But it's a good bet that the foods report will stir up a legislative hornet's nest. The committee will undoubtedly recommend a "new chemicals" section calling for prior approval of materials used in the raising, processing or manufacture of foods.

Whether the Delaney committee will grasp the thorny problem of water fluoridation is still up to the members.

But a Swedish answer to the argument of "enforced medication" is now being researched at the University of California. The idea: simply to mix calcium and magnesium fluorides with table salt. Experiments with hamsters show the same degree of decay prevention.

Next—and more difficult—steps: to see if it works equally well on humans; to determine the best concentration; to devise methods of control that guard against under- or overdosage.

Something new under the sun is "porcelain fertilizer," now being put on the market by Ferro Corp. (Cleveland).

Actually, it's a fused "agricultural frit" containing vital trace elements—iron, boron, zinc, copper, manganese, iodine, molybdenum.

Now it's being sold to commercial fertilizer mixers, will later be sold in small packages to the backyard gardener.

Advantage claimed by Ferro chemists for their product: Because it's fused it dissolves slowly, releases elements at the proper rate for maximum utilization by the growing plants.

But makers of commercial fertilizers worry about one possible result of publicity concerning trace elements—which a new product like Ferro's engenders: It spotlights fertilizer composition, may speed state legislation requiring analysis to show percentage of various elements.

This has been a week to buy property. American Cyanamid exercised its option on 585 acres of land on the Mississippi River eight miles above New Orleans, where it will build its acrylonitrile plant (CW Newsletter, Dec. 1, '51).

Du Pont also exercised options on 1,100 acres at New Johnsonville, Tenn. No plans yet on what or when construction will be undertaken.

Nickel is in the news: The government-owned Nicaro project in Cuba, shut down since World War II, is now gearing up for full production (30 million lbs. a year) by June.

And the operating company, Nickel Processing Corp., has a new majority owner—National Lead Co. National Lead and Fomento Minerales de Cuba have bought out N. V. Billiton Maatschappij.

It looks like lots of acrylate underfoot this year. Monsanto and Wilson are pushing production (CW, April 19) and American Cyanamid is now field-testing its product, tentatively named X-19.

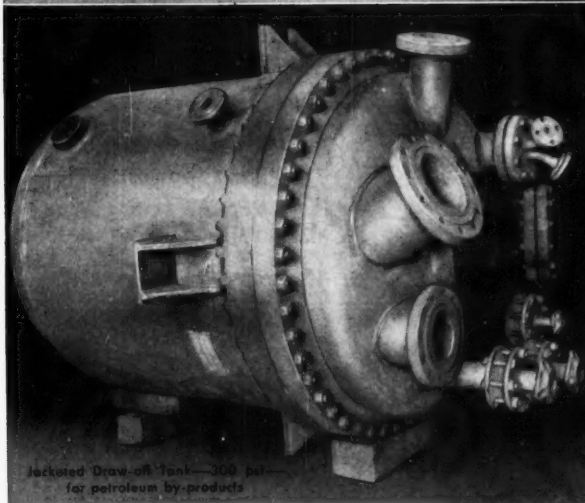
... The Editors

*It's* **GRAVER**

*for pressure vessels  
and code work!*

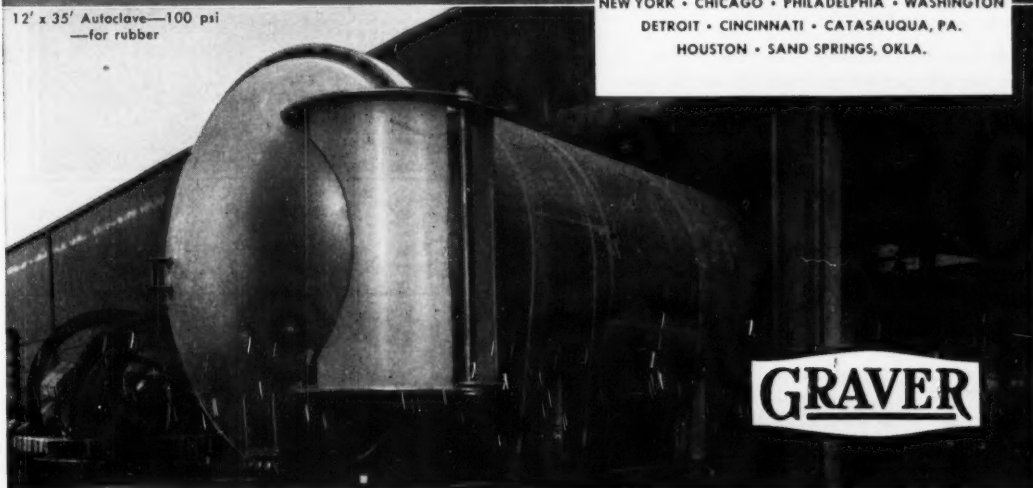


Two Quench Pots 3' x 41 1/2" —35 psi—  
for petrochemicals



Jacketed Draw-off Tank—200 psi—  
for petroleum by-products

12' x 35' Autoclave—100 psi  
—for rubber



Processing plants today increasingly require specially designed pressure vessels. Graver has long been expert in the fabrication of code vessels, whether API-ASME, ASME or even more stringent specifications set by customers. Graver-built pressure equipment assures long life and safe, dependable service.

The steady flow of steel, clad and alloy pressure vessels through Graver's plants is suggested by these shop views. They indicate the many skills and services obtainable through Graver's high standards of welding craftsmanship.

**GRAVER TANK & MFG. CO., INC.**

EAST CHICAGO, INDIANA

NEW YORK • CHICAGO • PHILADELPHIA • WASHINGTON  
DETROIT • CINCINNATI • CATASAUQUA, PA.  
HOUSTON • SAND SPRINGS, OKLA.

**GRAVER**

# Our scientists are stuck!

## Our chemists are confounded!

## Our new products dept. is perplexed!

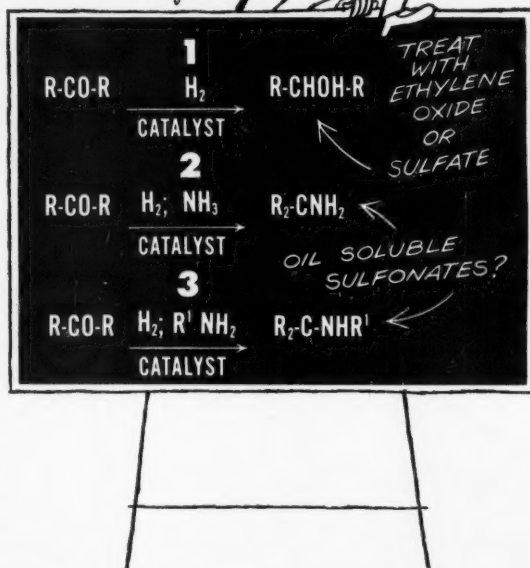


We have a new family of materials never before made commercially... the symmetrical ketones of the fatty acids  $R-CO-R$ . It's our Vopcolene 77 family which includes Stearone, "Coconone" (ketones from coconut fatty acids) and Laurone (90%).

These long-chain waxy dialkyl ketones might be the hottest thing ever discovered for wax modifiers, anti-blocking agents, specialty organic products... maybe even for hunting boots!

We do know their formulae... we know that we can make them inexpensively in quantity... and we know they are stable under high and prolonged heat. We also know that they undergo most of the usual ketone reactions. But, we haven't discovered how *you* can best use them. So we welcome your suggestions and reactions.

These long-chain dialkyl ketones,  $R-CO-R$ , are available in commercial quantities now. For samples and technical data, write, wire or call Research Dept.



**VOPCOLENE  
DIVISION**

**VEGETABLE OIL PRODUCTS COMPANY, INC.**

5568 EAST 61ST STREET, LOS ANGELES 22, CALIFORNIA



## BUSINESS &amp; INDUSTRY . . . . .

## Chemical Expansion: Third-Time Charm?

Top-level mobilization officials last week were looking over the chemical expansion program for the third, and—barring total war—last time.

The Defense Production Agency, in this phase, has been rapidly issuing a myriad of expansion goals. Out of the 71 issued by the end of last week, 31 were for chemicals. The proportion was large primarily because each chemical is unique as to manufacture and end use.

But while these goals were filtering through DPA, the chemical division of the National Production Authority had hopes of completing work on every one of its tax amortization write-off applications within two months.

Certificates probably would not be issued by then, since DPA processing follows action by NPA on both certificates and the prerequisite expansion goals.

Expansion goals characterize the third phase of defense expansion—not, as might be expected, the first. This primary phase of mobilization, which lasted through August 1951, was by and large a "hurry up and get it built" period. In some cases, officials had an idea of what was needed, but in others, action simply had to supercede discrimination.

Using this analogy, the second phase was a period of over-all discrimination. During this time, which followed announcement of a moratorium on certificates, DPA decided that no new applications were to be processed unless an expansion goal had been set.

The first such goal was officially announced in December. That ushered in the third period—one of evaluation, both of new applications and of granted certificates.

As far as top planners in DPA are concerned, this has centered on goals for single chemicals (*see chart*). For the future, there will be an effort by NPA's chemical commodity men to add up expansion for related materials as a group (for example, plastics monomers, synthetic fiber components). They feel that such goals would give them more leeway in details; errors in their calculations may average out.

Expansion policy, however, will

Commodity	Expansion Goal Jan. 1955	% Over Jan. 1951
<b>INORGANICS</b>		
Sulfur .....	8.4 million long tons	38.2 <sup>1</sup>
Chlorine .....	3.43 million short tons	55.9 <sup>1</sup>
Nitrogen* .....	2.93 million short tons	90.3 <sup>1</sup>
Phosphorus (elem.)* .....	275,000 short tons	70.8
Chromite (chemical) .....	400,000 long tons	NA
Calcium Carbide .....	1.23 million short tons <sup>2</sup>	57.7
Sodium Cyanide .....	91.6 million pounds	NA
Hydrofluoric Acid* .....	130 million pounds	38.3
Hydrogen Peroxide .....	45.4 million pounds	96.5
Carbon Black* .....	2,320 million pounds	52.6
Titanium Dioxide* (pigment) ..	370,000 short tons <sup>2</sup>	31.2

**ACYCLIC ORGANICS**

Methanol <sup>3</sup> (synthetic) .....	226 million gallons	29.9
Formaldehyde <sup>3</sup> (37%) .....	1.675 billion gallons	26.4
Ethylene Oxide .....	969 million pounds	77.5
Ethylene Glycol .....	850 million pounds	62.5 <sup>1</sup>
Maleic Anhydride .....	49 million pounds	81.5
Butadiene <sup>4</sup> .....	162 million pounds	165.6
Methyl Chloride .....	72 million pounds	111.8
Carbon Tetrachloride .....	331 million pounds	47.8
Trichlorethylene* .....	400 million pounds	44.4
Perchlorethylene* .....	180 million pounds	71.4

**CYCLIC ORGANICS**

Phenol .....	623 million pounds	81.3
Aniline .....	135 million pounds <sup>2</sup>	26.9
Naphthalene .....	555 million pounds <sup>2</sup>	58.1
Phthalic Anhydride .....	367.7 million pounds	61.5
Resorcinol .....	10 million pounds	NA
Quinoline* .....	5.8 million pounds	241.2
Anthraquinone Vat Dyes .....	48 million pounds	29.7

**INSECTICIDES**

DDT (100%) .....	155 million pounds	52.0
Benzene Hexachloride (tech.) ..	23.7 million pounds	35.9
Lindane* .....	5.12 million pounds	NA

\* More expansion still needed

<sup>1</sup> Expansion over 1950

<sup>2</sup> Expansion by 1954

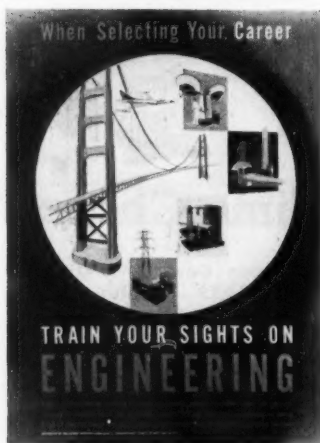
<sup>3</sup> Not including government owned ordnance facilities

<sup>4</sup> Not including government owned facilities going to GR-5

stay the same: Goals should include enough capacity to supply 100% of 1955 civilian needs plus the military requirements for limited mobilization.

Only a few programs are below goals—and some may be above them.

Mobilizers believe that, in general, they have done a good job. But among chemical businessmen, there's unanimous agreement that any large errors could prove as devastating as a delayed-action bomb.



## "Recruiting" Engineers

HIGH SCHOOLS all over the country are displaying this poster put out by the Engineers Joint Council's Engineering Manpower Commission. With all reliable estimates indicating that upwards of 30,000 newly graduated engineers will be needed each year, excluding the needs of the military, and with expected graduation classes of 28,000 in 1952, 19,000 in 1953, and less than 17,000 in 1954, all concerned are becoming alarmed. Hence the attempt to go down to hitherto-neglected high-school students and light a fire of interest in all phases of engineering.

## Goal: Cheaper Power

To the average citizen atomic power means bombs and rocket ships; but to the newly formed Walter Kidde Nuclear Laboratories, Inc., it means a business opportunity in supplying scientific and engineering know-how in this field for industrial utilization. Designed toward commercial development of atomic power, the specific function of the new corporation is to make available to those interested, research and development services in the field of nuclear energy. Any immediate work will probably be for the design and operation of "custom-made" power plants together with the application of nuclear technology to processing.

This unique corporation is the fostering of other Kidde enterprises: Walter Kidde and Co. (fire extinguishers, etc.), Walter Kidde Constructors, Inc., and the Bloomfield Tool Corp.

The technical staff is to be headed up by Karl Cohen, former director of the Atomic Division of The H. K. Ferguson Co. and a pioneer in the pre-Manhattan Project research.

Cohen's chief associate is W. I. Thompson, who will be chief engineer of the Laboratories. Both men have been engaged in the development of new types of nuclear reactors for the past several years. Their present staff includes 30 scientists and engineers, but this number is expected to be tripled in the next one or two years.

**Not Whether but How Soon:** Already, atomic energy is being directed, under Government auspices, toward powering submarines and aircraft. Cohen says: "The problem is not whether atomic power can be used industrially but rather how soon such use can be made economical."

Also: "The tolerable investment range for reactor and other related special equipment appears to be between \$10 million and \$15 million for a 100,000 KW plant, but no one has built such a power plant for this price yet. Commercial designers, unhampered by military considerations and spurred by profit incentives, may be able to reduce costs substantially."

## LABOR . . . . .

**CIO Too:** Out at Hoosier Ordnance Plant, Charlestown, Ind., last week, the International Chemical Workers (AFL) found they had competition in the drive to secure bargaining rights. NLRB notified the AFL union that CIO's Gas, Coke & Chemical Workers would be on the ballot with them in the upcoming election.

**Company Wants In:** Officials of Nosco Plastics, Erie, Pa., were reported last week to be getting advice on the possibility of securing an injunction to permit them to get back into their strike-bound plant.

When the workers, members of the United Rubber Workers (CIO), walked out in support of demands for a union shop, formal picket lines were not set up immediately; but nearly all of the 200 production workers gathered about the plant and let no one in.

**New Minimums:** New wage rates have been set up for the Walsh-Healey Act. In effect (since April 19) on contracts of \$10,000 or more, the new minimums are: \$1.05 an hour in small arms ammunition manufacture; \$1.12 in blasting and detonating cap manufacture; and \$1.20 in explosives manufacture.

Provision is made for paying lower rates to beginners, apprentices and handicapped workers.

**Company Correct:** Aftermath of a so-called "sickness" strike by members of

		<b>CHEMICAL BALANCED</b>	
		Axe	Houghton
		A	B
Stock			
Air Reduction . . . . .			
Allied Chemical & Dye . . . . .			
American Agr. Chem.			
American Cyanamid			NC
American Cyan. pfd.			
American Potash . . .			
Atlas Powder . . . . .			
Columbian Carbon . . .			
Dewey & Almy . . . . .			
Diamond Alkali . . . . .			
Dow Chemical . . . . .			
Dow Chemical, rights			
Du Pont . . . . .	- 300		
Eastman Kodak . . . . .			NC
Food Machinery, pfd.			
Hercules Powder . . .			
Hooker Electrochem.			
Interchemical . . . . .			
International Min. & Chem. . . . .			
Koppers . . . . .	1,000NH		
Mathieson . . . . .			
Monsanto . . . . .			
National Cylinder Gas			
Pennsylvania Salt . . .			
Chas. Pfizer . . . . .			
Pittsburgh Coke & Chem. . . . .			8,140
Pittsburgh Coke & Chem., pfd. . . . .			2,000NH
Rohm & Haas . . . . .			
Spencer Chemical . . .			
Sun Chemical . . . . .			
Texas Gulf Sulfur . . .			
Union Carbide & Carbon . . . . .	- 500SE		
U. S. Potash . . . . .			
Victor Chemical . . . .			

the Gas, Coke & Chemical Workers (CIO) against Chisholm-Ryder Co. came last week when an impartial arbitrator handed down a decision in favor of the company.

The "strike" came about when the employees stayed home in protest against the transfer and layoffs of certain employees. Prof. J. D. Hyman, University of Buffalo law school, ruled that the company was within its rights in the action and denied the union's grievance.

**Cyanamid Signs:** The AFL Chemical Workers have signed a new contract with the Calco Chemical and Plastics divisions of American Cyanamid at Bound Brook, N.J. A retroactive increase to Feb. 11 for all hourly workers, an additional paid holiday, and numerous fringe benefits feature the new pact.

**Strike Ends:** Last week's job-assignment walkout by AFL Papermakers at Robeson Process Co., Erie, Pa., ended after a week. Terms were not divulged.

## STOCK PURCHASES BY INVESTORS' INVESTORS

## STOCK AND BOND FUNDS

Boston	Common-wealth	Group Securities	Wellington
	600		-15,000SE
5,800NH	- 500		6,000
	-1,300SE		
6,000NH	- 400	-500SE	5,000
	-1,500SE		
NC	600		
	500		
			15,000NH
			19,800NH
731	- 62		3,075
- 200	1,500	-500SE	
	1,400		NC
	1,200		
-8,400SE	2,000NH		
	-1,200		-11,000
	-1,200SE		
1,000	700		1,000
	-3,146SE		
			300
384			4,500
	-1,000		
-2,300SE	- 300SE		
-1,500	2,200	-500	6,000
			-12,000SE
			14,400

## COMMON STOCK FUNDS

Sub-total	Broad Street	Funda-mental	Mass.	National	Sub-total	Total
-14,400					-	-14,400
11,300			NC		-	11,300
- 1,300					-	- 1,300
10,100	500	3,000			3,500	13,600
- 1,500					-	- 1,500
600					-	600
500					-	500
15,000				8,500	8,500	23,500
19,800			25,000		25,000	44,800
3,744		410	6,150		6,560	10,304
500		8,400NH			8,400	8,400
-2,000SE			NC	-2,500	- 4,500	4,000
-					-	-
1,400			NC		-	1,400
1,200				NC	-	1,200
- 6,400					-	- 6,400
-11,200		30,000NH			30,000	18,800
- 1,200	1,600	22,000NH		NC	23,600	22,400
2,700		2,000	- 6,500		- 4,500	- 1,800
- 3,146					-	- 3,146
300					-	300
-			-35,000SE		-35,000	-35,000
8,140					-	8,140
2,000					-	2,000
384					-	384
4,500					-	4,500
- 1,000					-	- 1,000
-2,600		2,000			2,000	- 600
5,700	NC		5,000	7,500NH	12,500	18,200
-12,000					-	-12,000
14,400		17,500		5,000	22,500	36,900

NC—No change NH—New holding SE—Stock eliminated

## Reflected Blueness

An ever increasing factor in the investment world has been the open-end mutual fund. From a position of relative obscurity before World War II, they have grown to the point where 103 of them now have assets of \$336 billion—up from \$2.66 billion a year ago.

Their basic appeal is to the little investor who doesn't have time to closely watch the market. The funds have many different objectives: income, capital appreciation, speculation. Some cover the whole investment spectrum, others only specific fields. To some funds, chemicals stocks are the only ones considered—viz.: chemical portfolios managed by Chemical Fund, Diversified Funds and Group Securities. To others, chemicals are only one field of many.

Here's a tabulation of 1951 stock portfolio changes by 10 general funds, six of which buy both stocks and bonds; four, only common stocks.

As investors' investors, mutual fund buyers are more in the public eye than most. As such, their opinions of chemical stocks provide an interesting record of the "blueness" of the chips.

## LEGAL . . . . .

**Over-Ceiling:** The Office of Price Stabilization has filed injunctive and treble damage actions against M. C. Thomas Co., Norwalk, Conn. Basis for the actions is alleged over-ceiling sales of polystyrene, phenol and single nickel salts.

The treble damages come to \$160,837.24.

**Export Denied:** Export privileges have been denied for one year to Albert Nyegaard, Danish importer-exporter. Charges against him were that he concealed the ultimate destination of 43,000 pounds of diethyl phthalate.

The Dane allegedly stated that

the material was for use in the Danish plastics industry, but actually it was for Sweden. Nyegaard claimed that he did this simply to prevent "pirating" of his customers by American firms.

**Sulfur Suit:** The Oil Well Processing Co., Houston, Tex., has filed a damage suit in Philadelphia federal court against Meyer Adolph Mathiasen, Philadelphia businessman.

The Houston company alleges that Mathiasen "misrepresented that he had 100% title and interest" on property in Costa Rica which the company leased from him for the 50 million tons of sulfur it is said to contain.

**On Trial:** The case of the Government vs. Delta Chemical Manufacturing Co., Chattanooga, Tenn., went on trial recently in U.S. District Court. The Government charges that the company violated minimum wage laws, overtime pay provisions, and failed to keep proper records. Further, that it

shipped goods in interstate commerce in violation of the law. The case is being heard without a jury.

**One Down:** One company has now been eliminated from the torrid tussle over bringing Alberta's natural gas to the Pacific Northwest. Spokane's Federal Judge Chase Clark ruled recently that Trans-Northwest Gas, Inc. must turn over its pipeline franchises in Washington and Oregon to Northwest Natural Gas Co.

**Reason:** Paul H. Graves, Spokane attorney, erred when he became president of Trans-Northwest after acting as attorney for Northwest. N. Henry Gellert, president of the Seattle Gas Co., indicated that the decision would speed up the arrival of Alberta gas in the Northwest with lower gas costs to the consumers.

**To The Salt Mines:** Dominion Tar & Chemical Co., Montreal, Canada's largest producer of coal tar chemicals, has filed a hefty \$5 million suit against the International Salt Co. of the United States, and its Canadian subsidiary, International Salt Co. of Canada, Ltd.

Dominion claims that the American firm is breaking an agreement for the joint mining of rock salt along Lake Erie by planning to erect a \$3.5 million plant 20 miles south of Chatham, Ont.

The plant is being built by the Canadian salt company, but Dominion wants the court to declare that the U.S. firm and its Canadian subsidiary are actually in a partnership to produce rock salt.

The Montreal firm is asking, among other things, that the two salt companies be enjoined from excluding the plaintiff from any part of the land now in dispute. It is also asking that a receiver be appointed until the "joint venture" can be wound up, and access to the salt companies' books.

## Even Steven

Industry was buzzing this week over the Ebasco coal hydrogenation audit. To some, Ebasco's figures clearly seconded those of Interior Department's Bureau of Mines. To others, its conclusions that private industry could not finance such an operation now meant the end of the matter.

These were the poles of opinion. The facts were somewhere in between.

• Ebasco estimated that to give investors a fair return, liquid fuel from coal would have to be sold at about 16¢ per gallon. This figure was closer to Interior's 11¢-a-gallon estimate than to the National Petroleum Council's 41.4¢ result (CW, Nov. 17, '51).

## THREE GROUPS, THREE OPINIONS

### A plant which costs

(Mines)	(Ebasco)	(NPC)
\$414 million	\$404 million	\$533 million

### with yearly operating costs of

\$50.2 million	\$55.8 million	\$83.3 million
----------------	----------------	----------------

### under conditions on Jan. 1, 1951, would have to sell gasoline for

11¢ per gal.	16¢ per gal.	41¢ per gal.
--------------	--------------	--------------

### and would be able to sell chemical by-products each year for

\$44.2 million	\$40.3 million	\$16.4 million
----------------	----------------	----------------

### This would be enough income to give investors a return of

7.2%	14%	6%
------	-----	----

### commensurate with risk that private stockholders would take with the

\$165 million	\$202 million	\$535 million
---------------	---------------	---------------

### which they would be asked to invest.

Rather than invalidating NPC's figure, which was based on 100% private financing, Ebasco's estimate is a revision of Interior's.

It could have been little else. Ebasco was retained to audit government figures, not to compare them with NPC's.

• Ebasco stated that, assuming conditions of Jan. 1, 1951, private capital could not undertake the project. This statement is sure to spur those who want government fingers in more pies. While demand for petroleum is increasing rapidly, Reserves are also going up. The need for liquid fuel from coal probably depends on which increases faster.

There is a strong possibility that more chemicals will be made from coal. The economics here, of course, depends on supply and price of natural gas to industrial consumers. Again, this is a long-range proposition, and not—as Interior Secretary Oscar Chapman sees it—something we must be committed to before election day.

• On several important construction items Ebasco figures are lower than those estimated by Interior and considerably under NPC projections. Main reductions are in amounts allowed for worker housing, electric power plant and hydrogen treatment plant.

• Figures on by-product sales are

in general agreement between Interior and Ebasco with one exception. Ebasco believes mixed cresols will be less marketable, thus accounting for the major difference between by-product revenue figures (see chart).

On this point, as on most others, there is still a considerable difference between those of Ebasco and Mines and those of the petroleum council. Despite the eminent respectability of NPC's estimates, the release of Ebasco's figures does deflate them slightly.

Actually, different assumptions underlie each of the estimates. NPC's estimate of 41.4¢ per gallon assumed that capital be supplied only by private investors, who would want 6% on their money.

Interior, assuming that the government would provide 60% of the money, allowed for a 7.2% return to private investors in pegging its fuel price at 11¢.

Ebasco says that at the 11¢ price, a small return would go to investors. It assumes, in setting a 15.7¢ to 17.6¢ price, that even if the government puts up half the money, the project would still have so much risk in it that investors would have to be offered a 14% return to make the speculation worthwhile. Ebasco does point out that the inherent flexibility of coal hydrogenation makes for market stability, but this doesn't change its estimate.



*Announcing a new*  
**JEFFERSON**  
*Chemical...*



# ETHYLENE CARBONATE

**now available in pilot-plant quantities**

*Properties of a typical sample of Jefferson's Ethylene Carbonate are:*

Melting point, °C	35-36
Refractive index @ 40°C	1.4190
Flash Point (open cup), °F	320
Appearance	
liquid	clear, water-white
solid	white, crystalline
Boiling point, (740 mm), °C	243-244

*Suggested Applications:*

high boiling solvent for polyacrylonitrile, lignin,  
 and certain other polymeric materials  
 intermediate for preparation of pharmaceuticals,  
 agricultural chemicals, fungicides, plasticizers,  
 and other products  
 convenient hydroxyethylating agent.

You may obtain technical information and experimental samples for research and development by sending the coupon or by writing to our Market Development Division, Dept. B.

**Jefferson**  
 CHEMICAL COMPANY, INC.

711 FIFTH AVENUE, NEW YORK 22, N. Y.



Jefferson Chemical Company, Inc.  
 Market Development Division, Dept. B  
 711 Fifth Avenue, New York 22, N. Y.

Gentlemen:

- ☐ Please send technical data on ethylene carbonate.  
☐ Please send experimental sample.

Name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_

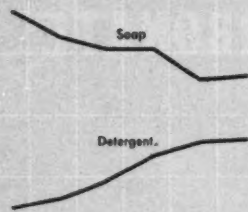
Address \_\_\_\_\_

City \_\_\_\_\_

Essential Chemicals From Hydrocarbon Sources: Ethylene Oxide • Ethylene Glycol • Ethylene Dichloride  
 Diethylene Glycol • Monoethanolamine • Diethanolamine • Triethanolamine

### SOAP VS. SYNTHETIC DETERGENTS

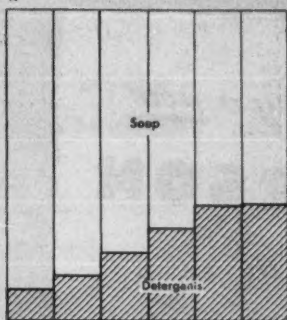
↑ Billion Pounds



Association of American Soap and Glycerin Producers Inc.

### DETERGENTS MOVE UP

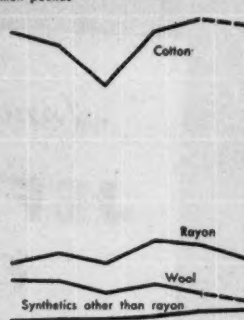
↑ %



CHEMICAL WEEK

### TEXTILE MILL CONSUMPTION

↑ Million pounds



Textile Organon  
IQ 1952 rate estimated by CHEMICAL WEEK

## How Are YOU Doing?

The chemical process industries—paralleling and often surpassing general business activity—have performed remarkably well since 1947.

Here are the best obtainable data on several important segments. You can check your company's showing against these charts, see how it measures up.

You can't lump the chemical process industries together and say they've done well—or done poorly.

Each segment is sensitive in its own characteristic way to the economic climate, to technological shifts, to consumer fads. Thus, while as a group they have prospered, some products have done inordinately well at the expense of others in inter-industry or intra-industry competition.

One might conclude from the drop in soap output, for example, that America is 30% dirtier today than five

years ago. But synthetic detergents have taken up the slack: production rose from 400 million lbs. (finished built weight) in 1947 to 1½ billion lbs. early this year.

World conditions as well as technological improvements account for the fact that synthetics have taken over the lion's share of rubber consumption. As of early this year they account for two-thirds of the total.

The drop in leather tanning is due largely to the inroads of vinyls and other synthetic, lower-priced substi-

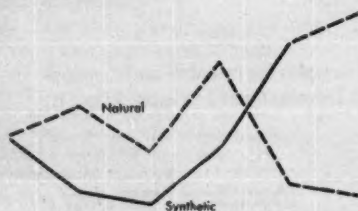
tutes. Wool and rayon are squeezed between cotton—which has held its own—and the upcoming synthetics.

The postwar marriage boom means house-building, and new houses need paint. That sums up at least part of the high construction level that has bolstered paint, varnish and lacquer sales. Drugs, petroleum, pulp and paper have moved steadily upwards, and the trend continues.

All in all, it's been a good quinquennium—and indications are that the ensuing one will be good too.

### RUBBER CONSUMPTION

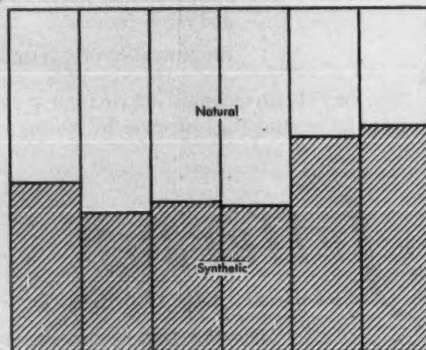
↑ Thousand long tons



Rubber Manufacturers Assn  
IQ 1952 rate estimated by CHEMICAL WEEK

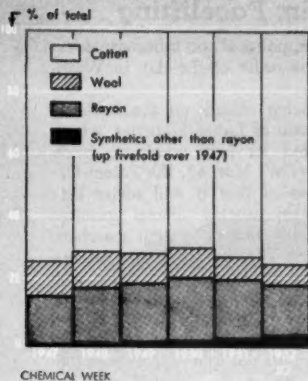
### RUBBER Synthetic vs. Natural

↑ %

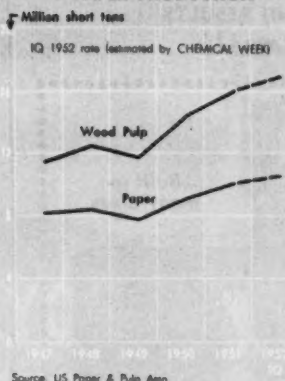


CHEMICAL WEEK

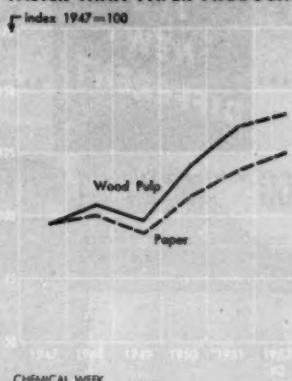
### SHIFT TO SYNTHETIC FIBERS



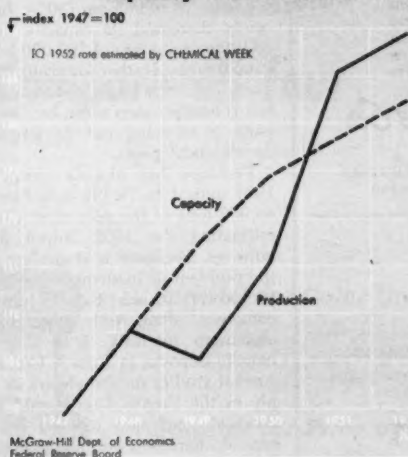
### WOODPULP VS. PAPER PRODUCTION



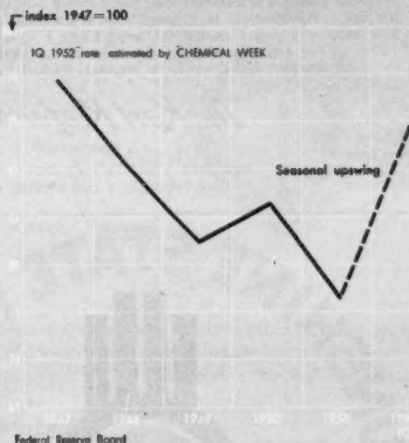
### WOODPULP OUTPUT ROSE FASTER THAN PAPER PRODUCTION



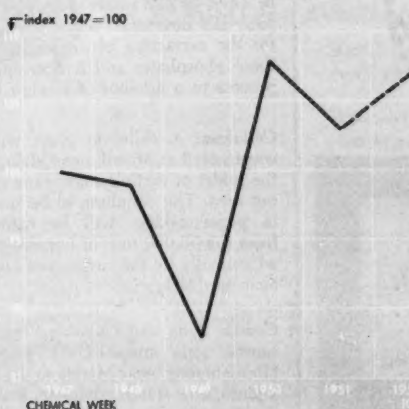
### PETROLEUM REFINING Capacity vs. Production



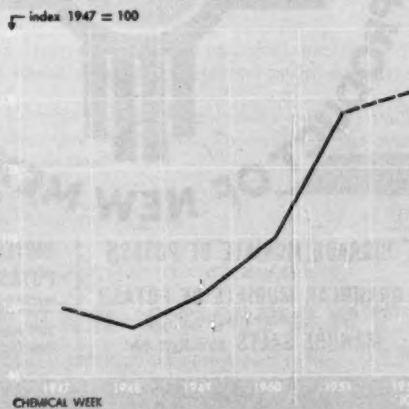
### LEATHER TANNING PRODUCTION



### PAINTS, VARNISH, LACQUER SALES Adjusted for Price Changes



### DRUGS AND PHARMACEUTICALS OUTPUT Man-hours Worked Adjusted for Productivity

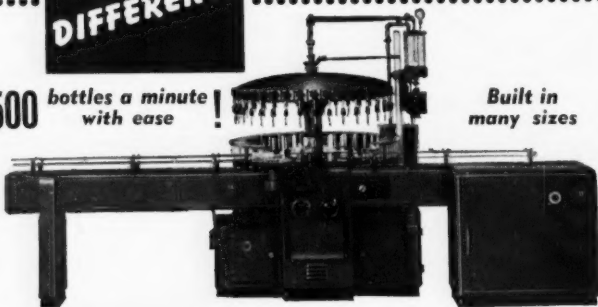


**IT'S  
NEW -  
DIFFERENT!**

**SURPRISING RESULTS  
in store for you !!!**

**500 bottles a minute  
with ease!**

**Built in  
many sizes**



**KARL KIEFER Pressure-Vacuum Filling Machine**

A unique principle in constant level liquid filling . . . using pressure and vacuum in combination. High speed even when filling viscous products. Low vacuum is always carried (a) when filling F style cans; (b) when filling volatile products. May also be operated as "straight pressure" or "straight vacuum." Just a wonderful machine! Perfect for plastic squeeze bottles, too.

Write today for  
Pressure-Vacuum  
Circular!

*The Karl Kiefer Machine Co.*

CINCINNATI, U. S. A.

NEW YORK • BOSTON • CHICAGO • BALTIMORE • SAVANNAH  
SAN FRANCISCO • LOS ANGELES • LONDON, ENGLAND



Reg. U. S. Pat. Off.

**HIGRADE MURIATE OF POTASH**  
62/63%  $K_2O$   
**GRANULAR MURIATE OF POTASH**  
48/52%  $K_2O$   
**MANURE SALTS** 20%  $K_2O$  Min.

**UNITED STATES  
POTASH COMPANY,  
INCORPORATED**  
30 Rockefeller Plaza,  
New York 20, N. Y.

## Again: Facelifting

Changes, political and otherwise, seem to be the order of the day in Washington.

Following closely on the heels of the Bureau of Labor Statistics, which introduced its new wholesale price indices (CW, Mar. 8), the Patent Office revealed that it will revise listings in its weekly official gazette. Come July, chemical patent searchers no longer will have to glean patents on rhubarb cleaning machines and non-sogging piecrust mixes.

Chemical patents, instead of being bunched with all other chronologically, will appear in one section of the gazette.

## FOREIGN. . . . .

**Aluminum:** Pechiney, France's major producer of aluminum (80%), has recently increased its capacity by the addition of a group of 100,000-ampere vats, thereby further lowering its production costs. This extension in facilities is another step taken by the company in carrying out its large-scale development plans.

Pechiney has already jumped its 1951 output to 74,791 tons from the 46,900 tons of the preceding year. In estimating the 1952 output figure, however, Pechiney is stumbling upon the problem of inadequate hydroelectric power. To skirt the difficulty, the company, along with other French aluminum interests, is eyeing rich bauxite deposits in French Guinea. If current studies on the electricity supply in the French Guinea area seem favorable, company officials say that annual aluminum output might reach 100,000 tons when the necessary plants are built.

Another African project—the mining of calcium and alumina phosphates in Thies—is also under way. The company has developed a special process for the extracting of aluminum from these phosphates and is licensing the process to a number of foreign firms.

**Cellulose:** A cellulose plant will be constructed at Motril, near Malaga, in the midst of Spain's sugar-cane growing area. The cellulose, to be utilized in paper-making, will be extracted from the 50,000 tons of bagasse yielded annually by the sugar-cane crop of near-by districts.

**Caustic Soda and Chlorine:** The first caustic soda and chlorine plant at Mandaluyong, near Manila in the Philippines, now stands complete. Built by the Superior Gas & Equipment Co.



# BUY POLYOLS ON FACTS!

**Compare all four**



**FACT No. 1 . . . Sorbitol for Color Uniformity**

Every lot of Atlas Sorbo® is clear, and water white. This means that your end product will be uniform . . . eliminates the need for adjusting your formulas or processes to compensate for color variations.

**FACT No. 2 . . . Sorbitol for Price and Price Stability**

On price stability alone, sorbitol rates as the "best buy" in polyols. Its price trend through the years has been steadily downward. Today, sorbitol costs only 15c per pound.

**FACT No. 3 . . . Sorbitol for Availability**

Sorbitol, derived from sugar, is available in unlimited quantities. You don't need to worry about shortages of sorbitol or its derivatives.

Write today for the valuable 22-page Atlas sorbitol book containing charts, usage tables, and other helpful data. Personal technical assistance is available at your request.

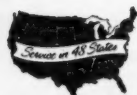
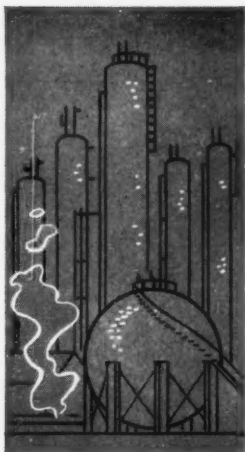


Industrial Chemicals Department

**ATLAS POWDER COMPANY**

WILMINGTON 99, DELAWARE • OFFICES IN PRINCIPAL CITIES

ATLAS POWDER COMPANY, CANADA, LTD., BRANTFORD, CANADA



Offices in 24 Principal Cities

a solvent  
for every problem

# AMSCO SOLVENTS



AMERICAN  
MINERAL SPIRITS  
COMPANY

CHICAGO • New York • Los Angeles

For the best in  
TAR BASES  
You can count on  
KOPPERS



Pure Pyridine  
Denaturing Pyridine  
Alpha Picoline  
Refined Mixed Picolines  
(Beta and Gamma Picolines  
and 2, 6 Lutidine)  
2, 4 Lutidine  
Special Fractions of  
Higher Boiling Lutidines  
and Collidines  
2, 4, 6 Collidine  
Mixed Toluidines  
Quinoline  
Isoquinoline  
Quinaldines  
High Boiling Tar Bases,  
Q.S.R. Grade

● Koppers Tar Bases are soluble in many organic solvents, including alcohols, ethers, esters, hydro-carbons and ketones. The lower-boiling bases are completely miscible with water in all proportions. The water-solubility of the bases decreases with increases in molecular weight.

Koppers also produces many other grades of tar bases that can be used in a wide range of applications. Write for data sheet TD-7; it lists specifications and uses. Samples will be furnished on request.

KOPPERS COMPANY, INC. • TAR PRODUCTS DIVISION • PITTSBURGH 19, PA.

(SUGECO), the \$1 million plant is capable of producing—in addition to liquid caustic soda (50%) and liquid chlorine—calcium hypochlorite, hydrochloric acid, hydrogen gas and ferric chloride. The SUGECO plant, drawing on cheap hydroelectric power, is slated to exceed Philippine market requirements in its production of all these chemicals except caustic soda.

**Nylon:** The Spanish Fefasa Co. and its subsidiary, the Organa Co., both government-controlled, plan to set up a new factory in Lejena for the production of "Phrlon," a type of nylon.

## KEY CHANGES

**Herman L. Shaw:** To president and general manager, Shaw Oil & Chemical Corp.

**Robert F. Huntley:** From vice president to president, Cowles Chemical Co.

**J. Walter Lovatt:** From director of purchases and manager, Bloomfield, N.J. plant, to vice president, Vick Chemical Co.

**R. S. Fitch:** From assistant general manager, manufacturing div., to vice president, Vick Chemical Co.

**Richard Kithil:** To vice president, production and market development, The Carwin Co.

**James R. Dudley:** From American Cyanamid Co. to vice president, sales, The Carwin Co.

**Joseph A. Snook:** From secretary and purchasing agent to vice president, sales, Atlas Mineral Products Co.

**Harry P. Broom:** To vice president, The Ralph M. Parsons Co.

**David E. Cordier:** From associate director of research to director of research, Plaskon div., Libbey-Owens-Ford Glass Co.

**Harold A. Hoppens:** From associate director of research to director of technical service, Plaskon div., Libbey-Owens-Ford Glass Co.

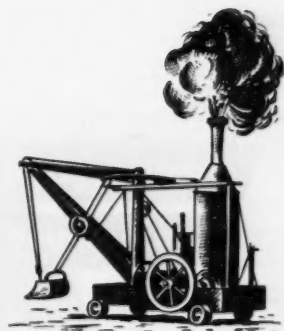
**Willard P. Cunningham:** To director, engineering sales, L. O. Koven & Brother, Inc.

**Richard B. Schneider:** From W. R. Grace & Co to chemical consultant, Empire Trust Co.

**Charles W. Walton:** To general manager, adhesives and coatings div., Minnesota Mining & Mfg. Co.

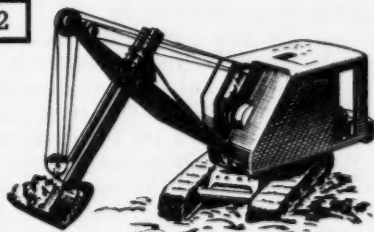
**William S. Goodfellow:** To general sales manager, Rheem Mfg. Co.

- **SODIUM BICHROMATE**
- **SODIUM CHROMATE**
- **POTASSIUM BICHROMATE**
- **SODIUM SULPHATE**



1909

*over 40 years of progress in chemicals*

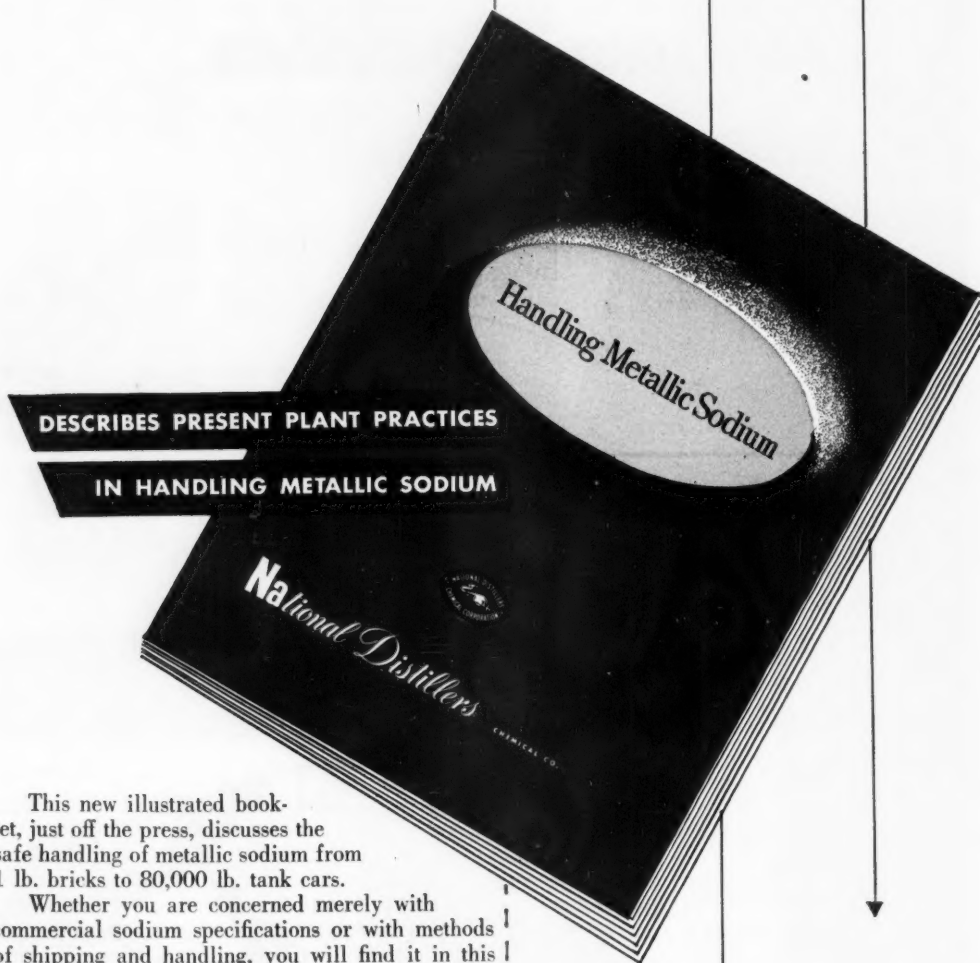


1952



**NATURAL PRODUCTS REFINING CO. • JERSEY CITY 5, N. J.**

*Send for your copy today!*



This new illustrated booklet, just off the press, discusses the safe handling of metallic sodium from 1 lb. bricks to 80,000 lb. tank cars.

Whether you are concerned merely with commercial sodium specifications or with methods of shipping and handling, you will find it in this easy-to-read 24-page booklet.

For your copy, please address Dept. C, National Distillers Chemical Co., Ashtabula, Ohio.



**National Distillers Chemical Co.**  
DIVISION OF NATIONAL DISTILLERS PRODUCTS CORPORATION



# RESEARCH . . .



SCREENING ANTIBIOTIC MOLDS: Not every one will give a wonder drug.

## Plan For Poor Relatives

Industrial and non-medical applications now are prime objectives of a major antibiotic research effort.

Promising and potentially profitable new uses are in the cards—especially for the less-spectacular, non-therapeutic antibiotics.

But research is still in its infancy; commercialization may be a long way off.

The poor relatives of the antibiotic family—thiolutin, fumagillin, rimocidin, subtilin, etc.—are getting a lot of research attention these days. They probably never will snatch a critical case from the jaws of death. But then, not every antibiotic can be a wonder drug. Some are automatically disqualified because of toxicity, instability or any one of a number of practical considerations.

Yet therapeutic failure doesn't necessarily mean failure in other, less spectacular uses. On the contrary. The very same germicidal potency that makes one antibiotic a wonder drug may well nominate another for a worthwhile job in industry. That's the kind of thinking behind the newest phase of antibiotic research—the push for industrial applications.

Researchers make it clear beyond a doubt that the field is still very young; results at this time can only be called preliminary. But there's also little doubt that the picture is beginning to take form, revealing the depth and diversity of the area ahead.

**Back To the Soil:** Most antibiotics spring from the soil and, coming full circle, find their most promising industrial outlets in agriculture. On the strength of research at Missouri Agricultural Experiment Station, for example, they may have their work cut out in combatting a serious and widespread disease of fruit trees known as fire blight.

This bacterial scourge, caused by the *Erwinia amylovora* organism, is rampant east of the Rocky Mountains, has all but choked off pear production in the eastern two-thirds of the country. Efforts to curb the disease with commercial fruit tree sprays (Bordeaux, Dithane Z-78, Kolofog and Bioquin) have met with a notable lack of success.

Antibiotics on the other hand, give encouraging results. Missouri investigators sprayed low concentration water-solutions of streptomycin and thiolutin on experimental trees, found a sharp reduction of infection compared with untreated specimens. Thiolutin appeared to be more potent than

## SAVE MONEY ON PACKAGING

WITH CONTAINERS  
of MOLDED PAPER  
by *Keiding*



Ideal for granulated substances, powders, soaps, abrasives, even some liquids and semi-liquids, Keiding Molded Paper Containers are amazingly strong, light in weight and low in cost.

You may find many economical uses for these containers. They're sturdy enough for shipping, attractive enough for a sales and display package, these containers are available in a wide variety of sizes and shapes. Standard color is white. Write for prices and samples.

Available in nine sizes, ranging from 1 pint to 5 gals., with covers tight-fitting. (Not recommended for shipping liquids.)

**KEIDING PAPER PRODUCTS CO.**

3048 North 34th Street, Milwaukee 10, Wis.

Largest Manufacturer of Molded Paper Containers

Quality • Integrity • Service • Quality • Integrity • Service

Service • Quality

Integrity • Service

Quality • Integrity

Service • Quality

Integrity • Service

Quality • Integrity

Service • Quality

Integrity • Service

Quality • Integrity

Service • Quality

Integrity • Service

Quality • Integrity

Service • Quality

Integrity • Service

Quality • Integrity

Service • Quality

Integrity • Service

Quality • Integrity

# AHCO

Fine Industrial Chemicals

SINCE 1815

**ESTERS, PLASTICIZERS**

**AHCOLEINS**

(A Complete Range of Highly Refined Red Oils)

**WETTING AGENTS**

**STEARIC ACIDS**

Product Samples and Literature on Request From Your Nearest AHCO office

## ARNOLD, HOFFMAN

PROVIDENCE • RHODE ISLAND

Associated with

Imperial Chemical Industries Ltd.

London, England

ARNOLD, HOFFMAN & CO., INCORPORATED - EST. 1815

OFFICES: Charlotte, Cincinnati, New York, Toronto, Philadelphia

PLANTS: Charlotte, N. C. • Cincinnati, Ohio • Dayton, Ohio



Quality • Integrity • Service • Quality • Integrity • Service

# MAGNESIUM SILICOFLUORIDE

# ZINC SILICOFLUORIDE

**HENRY SUNDHEIMER  
COMPANY**

103 Park Ave., New York 17

Telephone: MUrray Hill 5-4214

Fluorine Specialists for Over 40 Years

Go the scientific way...go **MGK**

**Insecticide Concentrates for**

**AEROSOLS**

**DUSTS**

**SPRAYS**

We offer complete formulas... ready to put right into your aerosol bombs or your retail packages or... combinations of insecticides and synergists that leave you only the minimum of processing to do or... the purest toxicants and synergists in their primary forms. MGK has the best of whatever you want.



Scarabaeus sacer  
Sacred beetle  
Model for Egyptian  
amulets and scarabs

THE PIONEERS OF  
PYRETHRUM AND ALLETHRIN

For complete information write  
1709 SE 6th St.,  
Minneapolis,  
Minnesota

**McLAUGHLIN**

**GORMLEY**

**KING COMPANY**

## RESEARCH

streptomycin. But the test cannot be considered conclusive; only a small number of subjects were treated.

Researchers at Chas. Pfizer & Co., manufacturer of thiolutin, further screened a number of antibiotics for in vitro effectiveness against the fire blight bacterium, report terramycin to be even more potent than thiolutin. Terramycin, however, is somewhat less stable than thiolutin. Consequently, the latter may be the better from a practical standpoint.

The pear isn't the only potential beneficiary of agricultural antibiotic studies. Diseases affecting tomatoes, potatoes, spinach, radishes and other produce are now under research scrutiny. One hopeful report on the value of antibiotics in combatting a bacterial blight of bean plants is fresh out of U.S. Department of Agriculture's Bureau of Plant Industry, Beltsville, Md.

Beltsville researchers tested twelve antibiotics in their search for an agent to control halo blight, a disease affecting the upper (primary) leaves of bean plants. Antibiotics were applied to the stems of test plants as a 1% paste. Results: Streptomycin sulfate was most effective, giving almost complete protection; dihydrostreptomycin sulfate proved nearly as good; terramycin hydrochloride came in a relatively poor third. All other test antibiotics were of little help.

Tobacco farmers as well as growers of food crops may in time have ample reason to bless the antibiotic researchers. Pfizer's thiolutin and rimocidin have shown their mettle in preliminary work against blue mold and black shank. Both of these maladies strike in the beds where young tobacco plants are nurtured before transplanting to the fields. The Brooklyn firm is taking an active hand in this work. Its technical service building boasts the only thriving tobacco bed in these parts.

**Once Removed:** Storage, only one step away from the ground for many fruits and vegetables, also is giving researchers something to think about. Mold can ruin a good peach crop in one day of storage; other produce, too, is prey to fungus attack. Work on this problem is now under way. It's still too early for concrete results but progress in at least one area has been made: A formulation of thiolutin and rimocidin gave good protection in early trials against the citrus disease, orange blue mold.

Slightly afield from fruits and vegetables but still closely akin to agriculture is the potential role of antibiotics in honey production. Recent studies have shown that fumagillin, a new

Upjohn Co. antibiotic, can prevent a fatal disease of honey bees.

All of the new research has not been centered on the agricultural industries. Canning and food packaging have provided a fertile field for study. Work at Department of Agriculture's Western Regional Research Laboratory was aimed toward reduction of sterilization temperature with the aid of the antibiotic subtilin. Terramycin is now being eyed for the same job in laboratory investigations. Its value in the control of various biological processes is also being explored.

The brewing industry could be another antibiotic proving ground. Pure yeast strains are the mainstays of modern brewing practice. It's important to keep cultures pure, but in case of contamination it's also important to detect and identify the culprit. Antibiotics, in selective culture media, might make this job a lot easier. Rimocidin (which kills yeasts, but not bacteria), thiolutin (kills a broad range of bacteria, but not yeasts) and polymixin (knocks out only gram-negative bacteria) are logical candidates.

Unightly mold and fungus growth on the walls of bottling rooms is another brewery headache that antibiotics may alleviate. Pfizer researchers have developed a thiolutin-rimocidin spray that looks good in the laboratory. Field tests are scheduled to begin soon.

Items on the future industrial antibiotic research agenda include paints, varnishes, plastics, textiles and leather; all are beset with mold and fungus worries. And a banana root infection in South America is slated for some attention in the near future.

**Hurdles:** In addition to problems yet to be overcome in the research laboratory, antibiotics face several more tangible hurdles in their bid for industrial markets. Instability is not the least of these. Closer to the issue is the problem of cost.

Antibiotics are expensive; no one denies that. But research people point out some saving graces: Potency is generally high; antibiotics are effective at very low concentrations. And the very pure materials used in medicine would not be required for most new applications. Crude antibiotics are now produced for animal feed supplements, could easily be turned out for industrial use.

As a matter of fact, industrial grade (about 50% potency) antibiotics are just around the corner. Pfizer is pilot-producing several. They're not yet for sale, but they bode well for the future of many of the poor-relative antibiotics.

# What goes into **BAGPAK** service to make it so dependable?

## MATERIALS

Pulp wood from I.P.'s own woodlands, converted into kraft at I.P.'s own paper mills, and made into bags in I.P.'s own bag plants. Practically everything that goes into the manufacture of a Bagpak bag is furnished by the facilities of International Paper.

*"you can bank on Bagpak!"*

## EXPERIENCE

Bagpak has been manufacturing multiwall paper bags since 1928 — makes all kinds of multiwalls, in basis weights to meet any strength required, in a complete size range, without printing or with "non-smear" printing up to four colors.

*"you can bank on Bagpak!"*

## DEPENDABLE DELIVERY

Five different I.P. Mills supply bag kraft — not only Natural but also Colored Kraft Paper, as well as Polyethylene Liners, Asphalt Laminated Kraft and Wet Strength Paper. Each bag mill is located on two or more different railroads. Two traffic departments assure prompt delivery.

*"you can bank on Bagpak!"*

## COMPLETE SERVICE

for heavy duty multiwall bags: — bags, bag closing materials, car liner, palletized shipments when required, packaging machines and scales — all from one source of supply! Staffs of experts help you with bag designs and packaging problems.

*"you can bank on Bagpak!"*

*All these go into the business of providing you with a dependable supply of multiwall paper bags. For the answer to any particular multiwall bag problem, write to:*

**Dept. K-1 BAGPAK DIVISION, International Paper Company, 220 East 42nd Street, New York 17.**

  
**International Paper** COMPANY  
BAGPAK DIVISION

BRANCH OFFICES: Atlanta • Baltimore • Boston • Boston • Boston  
Chicago • Cleveland • Denver • Los Angeles • New Orleans • Philadelphia  
Pittsburgh • St. Louis • San Francisco • THE CANADA: The Continental Paper  
Products, Ltd., Montreal, Ottawa, Toronto

**NOPCO'S**  
new series of  
**NOPALCOL\***  
Ethylene Oxide  
Condensates  
are  
outstanding

Wetting Agents  
Detergents  
Emulsifiers  
Leveling Agents  
Spin Bath Additives  
Rubber Latex  
Stabilizers

**NEVER** has such a wide choice of synthetic organic surface active agents been available from a single source.

**THE NEW NOPALCOLS** include both nonionic and cationic materials.

**INNUMERABLE MODIFICATIONS** are available to meet the requirements of different processing industries.

**MANY NOPALCOLS** are already being used to great advantage; the tremendous possibilities of others have not yet been fully explored. We'll gladly work with you to help adapt these outstanding chemical to your processing needs.

This FREE book contains valuable information, and includes a "Selection Chart" to help you choose the most suitable Nopalcol for your job. Send for a copy today.



\*Reg. U. S. Pat. Off.



**NOPCO CHEMICAL COMPANY** Dept. EOC-2

HARRISON, NEW JERSEY

Boston • Chicago • Cedar-town, Ga. • Richmond, Cal.

RESEARCH . . . . .



## Pencil Probe

**ARTHUR ANDERSON** extracts chemical components of incense cedar wood sawdust at University of California College of Agriculture, Berkeley. It's part of a probe for useful by-products of pencil manufacture. Pencil wood waste is enormous—about 60% from logs to the finished product. Aside from their search for commercially valuable chemicals, researchers are trying to learn more about the natural decay-resistance of incense cedar wood.

## Fission Product Push

Atomic Energy Commission is speeding up its efforts to develop worthwhile uses for radioactive fission products (CW, Nov. 17, '51), the waste material from plutonium manufacture. Three projects have been farmed out, are now under way at University of Michigan, Columbia University and Massachusetts Institute of Technology. Brookhaven National Laboratory (BNL) acts as coordinating agency for work in progress.

Behind the current research push are these facts: In ten years, millions of curies of radioactivity, in the form of liquid fission products, have accumulated in huge underground storage tanks. Obviously, disposal isn't easy. Diverting this atomic deadwood to useful application is the goal.

Here's what has been done so far:

- Research on cold-sterilization of drugs, using gamma radiation, is apparently well-advanced. BNL scientists feel that this application need not await the production of cheaper fission-product sources. Drug unit values

are high; irradiation costs are relatively low.

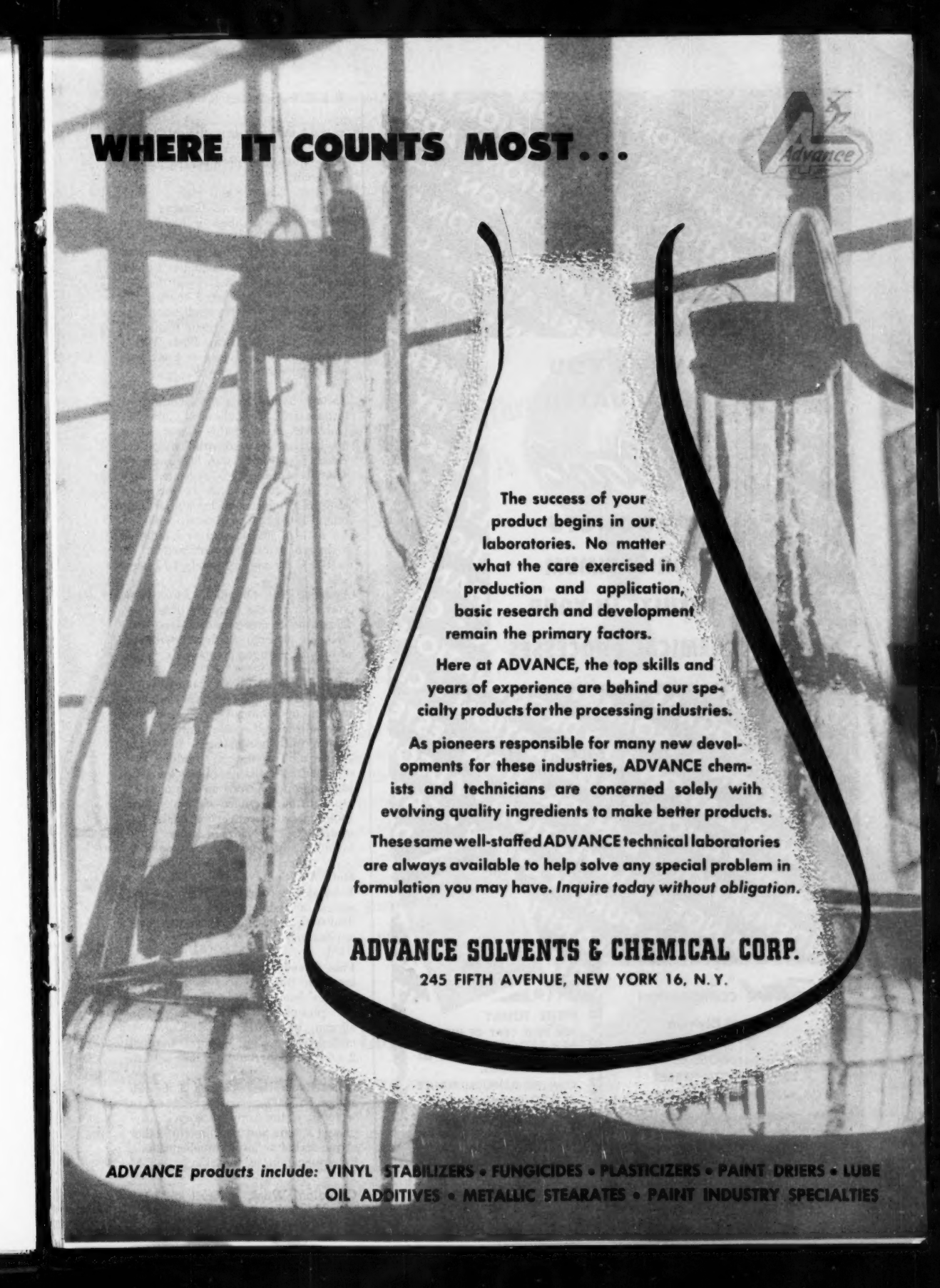
- Cold-sterilization of foods hasn't fared as well. Cost is still too high for the food packaging industry. And problems involving changes in texture, flavor and color of foods will take further study.

- Promising results have been obtained in the use of radiation to initiate polymerization of many pure plastic monomers. The absence of extraneous reagents, like catalysts and initiators, may well improve many finished plastics. Additional work is being done with monomers and copolymers which are not easily polymerized by conventional methods.

- BNL chemists and physicists are continuing a year-long study of methods of concentrating and drying the soupy fission products to radioactive salts which then could easily be packaged for shipment.

All of this work with fission products is not an impractical shot-in-the-dark. In a study for AEC, Stanford Research Institute found that, if the price





# WHERE IT COUNTS MOST...



The success of your product begins in our laboratories. No matter what the care exercised in production and application, basic research and development remain the primary factors.

Here at ADVANCE, the top skills and years of experience are behind our specialty products for the processing industries.

As pioneers responsible for many new developments for these industries, ADVANCE chemists and technicians are concerned solely with evolving quality ingredients to make better products.

These same well-staffed ADVANCE technical laboratories are always available to help solve any special problem in formulation you may have. *Inquire today without obligation.*

## **ADVANCE SOLVENTS & CHEMICAL CORP.**

245 FIFTH AVENUE, NEW YORK 16, N. Y.

**ADVANCE products include: VINYL STABILIZERS • FUNGICIDES • PLASTICIZERS • PAINT DRIERS • LUBE OIL ADDITIVES • METALLIC STEARATES • PAINT INDUSTRY SPECIALTIES**

**HAVE YOU  
EVALUATED**  
*Filtrol*  
**PRODUCTS  
FOR OPTIMUM  
RESULTS IN YOUR  
CHEMICAL PROCESSES**

*Filtrol* \* CORPORATION

Chemical Division

General Offices  
727 WEST 7TH STREET  
LOS ANGELES 17, CALIFORNIA

\* U.S. Pat. Reg. U.S. Pat. Off.

The World's Largest Manufacturers of Catalysts, Adsorbents, Desiccants  
and Other Chemically Treated Materials

**WRITE TODAY**  
FOR YOUR COPY OF FILTROL'S  
NEW BOOKLET DESCRIBING  
CHEMICAL APPLICATIONS OF  
FILTROL PRODUCTS.  
COMPLETE TECHNICAL SERVICE  
AT YOUR COMMAND.



## RESEARCH . . . . .

is right and certain technical difficulties are overcome, a market exists for large quantities of these radioactive materials.

**Fiber Spur:** Vigorous German interest in synthetic fibers is highlighted this week by the formation of an institute for high molecular chemistry and synthetic fiber research at University of Tuebingen. Activity at the new institute will be slanted toward the development of new applications for synthetics in the German textile industry. The fiber firm, Phrix Werke (Hamburg) will finance a good part of the organization's work.

**Tartaric Synthesis:** A new synthesis of tartaric acid, worked out at Columbia University, is probably slated for a good share of industrial attention. Here's how it works: A 30% aqueous solution of maleic acid is heated with 35% hydrogen peroxide in the presence of a tungstic oxide catalyst. Optimum reaction conditions: ratio of 1.5 mols of maleic acid to 1 mole of hydrogen peroxide maintained at 80 to 100 C for approximately 10 hours.

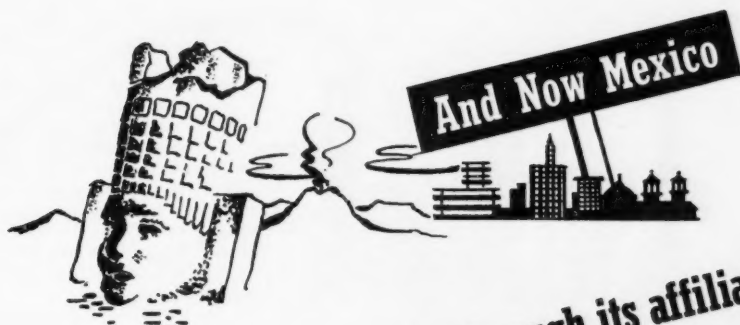
**Award:** Fine Organics, Inc. (New York, N.Y.) is the recipient of a Navy Department cost-plus-fixed-fee contract for research on the biosynthesis of organic nitrogen compounds.

**Acrylic Patents:** Two patents (U.S. 2,554,482 and 2,554,484) for the preparation of cyanoalkenes, especially acrylonitrile and methyl acrylonitrile, have recently been awarded to the Du Pont Co. The desired products are obtained by oxidation of propionitrile and isopropyl cyanide at high temperatures in the presence of iodine. Key: Iodine prevents conversion of the saturated nitrile to oxides of carbon while favoring oxidation to the alkene.

**Hot Addition:** Bjorksten Research Laboratories (Madison, Wis.) has just added a radiochemical division to deal with industrial radioactive-tracer applications.

**Fine Chemicals:** Eight new products lengthen the list of Schwarz Laboratories' fine chemicals. They are: acetyl phosphate, lithium; allantoin; alloxan; alloxantin; 2,6-dichloropyrimidine; ribose-5-phosphate, barium; 2,4,6-triaminopyrimidine; uric acid.

**Insect Bane:** U. S. patents 2,567,199 and 2,567,200—recently assigned to Secretary of the Army—note cyclohexyl phenyl ketone and the dimethyl ether of pyrogallol as insect repellents, safe for application to the skin.



The John J. Harte Co. through its affiliate,  
the Harte-Mex Corp., is ready to serve you in

**Mexico**

The New Mexican corporation is under the direction of Ing. Juan E. Alduncin, and is prepared to give complete service to both American and domestic industry in Mexico. If you have plans for a Mexican development let the Harte-Mex Corporation offer assurance of proper guidance from preliminary planning through final construction. Facts, processes and locations for industry in Mexico are available from our files. Assure the soundness of your Mexican project by discussing your plans with us, without obligation. Contact one of our American offices or the Harte-Mex Corporation at  
Palma 30-106, Mexico, D. F.

**John J. Harte Co.**

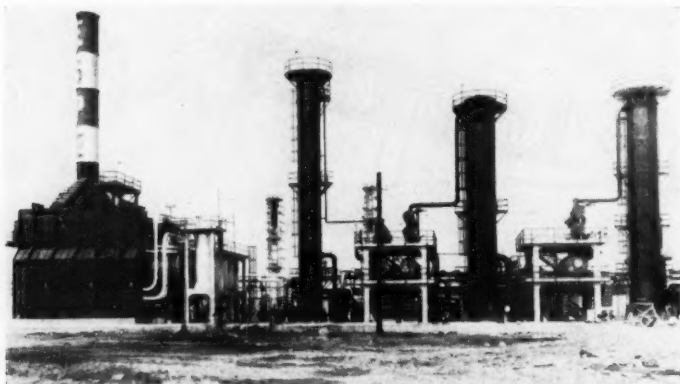
ENGINEERS • CONSTRUCTION MANAGERS  
ATLANTA • NEW YORK • HOUSTON



**Harte-Mex Corp.**

Palma 30-106  
Mexico, D. F.

# PRODUCTION . . . . .



PLATFORMER-UDEx MARRIAGE: An offspring of aromatics . . . and dollars.

## Process Partnership

A natural team: Platformer-Udex combination is the first of its kind to go on stream to produce benzene and toluene.

An Eastern States Petroleum Co. plant is now working out initial production kinks at its Houston refinery.

Significantly, this functional combine can be easily adapted to produce any of several aromatics. Economic potential is promising.

Benzene and toluene immediately, mixed xylenes and ethyl benzene later is the schedule that Eastern States Petroleum Company plans in the operation of its newly completed Platformer-Udex plant. Plant site is the company's Number 2 Refinery at Houston, Texas.

The unique feature of the Platformer-Udex system is the combination. This marriage, the first of its kind, is a natural. And one that both President Richard B. Kahle and Vice-president Joseph F. McCarthy, of Eastern States Petroleum, hope will produce an offspring of dollars as well as aromatic hydrocarbons.

A significant talking point about the Platformer-Udex system is its economic status: Current prices on coal-based benzene vary from 30¢ to 38¢ a gallon. Petroleum benzene is selling in the 50¢ range, but the cost of producing it depends on the price of the feed stock. A trade representative figures that petro benzene could probably be sold profitably for as low as 25¢ a gallon. This is important when you consider that coal-based benzene is practically gravy in the coking industry.

**Catalytic Conversion:** The Platformer, first member of the team, consists basically of four catalyst chambers

(and auxiliary equipment) to convert the charging stock mainly to the desired aromatics. A Udex<sup>®</sup> unit—next in the train—extracts the aromatic cut from the platformate for purification.

Straight-run gasoline, produced at the company's refinery, or natural gasoline from other sources, is the feed stock. First, a select cut is separated. The cut, made up mainly of methylcyclopentane and cyclohexane along with other C<sub>6</sub>-C<sub>8</sub> isomers, is the charge to the Platformer.

This charge is mixed with high-purity hydrogen and heated to 900 F prior to entering the Platformer. There it is dehydrogenated and reformed to benzene and other aromatics at 250 psi. over pelletized platinum catalyst. Any benzene originally in the feed passes through the system unaffected.

Freed hydrogen is separated from the reaction mixture, cleaned and recycled, and the benzene fraction metered to the Udex plant. Here the benzene-toluene cut is extracted by a diethylene glycol-water mixture, stripped of the solvent and sent to the final separator where benzene is removed as the overhead. Toluene, in lesser

\* This is how Udex was coined: U, from Universal Oil Products Corp., which developed the process; D, from the Dow Chemical Company which discovered the process; and EX, extraction.

amounts, is taken out as underflow.

The Udex charge of 1,000 barrels a day contains about 25% benzene, of which 99% is recovered.

**Simple and Cheap:** Udex is a simple and economical operation. And with only minor adjustments the combination plant can be modified to produce other aromatics; e.g., mixed xylenes, ethylbenzene, solvents, aviation gasoline and motor fuel base stocks. The Eastern States Petroleum plant, in fact, was built with the idea that such modifications would probably be made from time to time.

The diethylene glycol-water extraction medium is highly selective. Also, the solution is non-toxic and non-corrosive so that expensive, corrosion-resistant construction materials are unnecessary.

Although practically any mixture of aromatics and paraffins can be separated by this system, the process is particularly efficient in separating hydrocarbons of the C<sub>6</sub>-C<sub>8</sub> range. The presence of olefins, however, has a harmful effect on the otherwise sharp separation.

One of the main difficulties encountered in fractionation of benzene from its isomers is the fact that constant-boiling mixtures form, make the separation practically impossible. In the case of benzene and toluene isomers, Udex performs a separation that would be impractical with fractional distillation.

**Need Mothered It:** As in most cases, need mothered the Platformer-Udex development. The spur: more benzene, toluene and related aromatics required by a hungry industry to satisfy the growing demands for plastics, drugs, insecticides, aviation fuels and myriad other products.

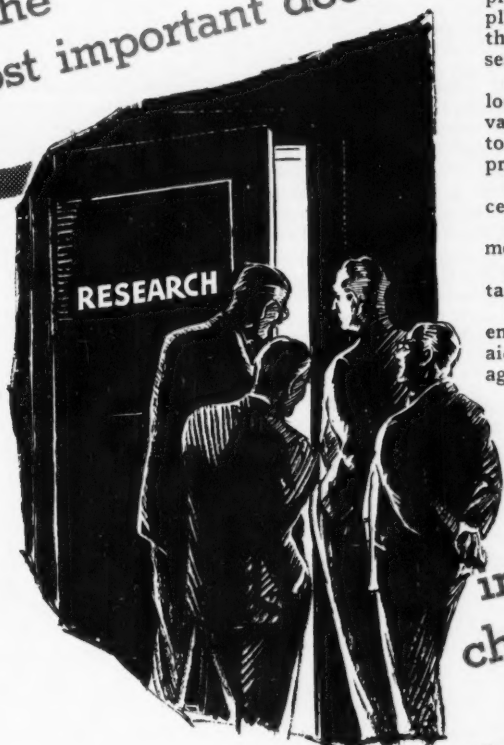
The Eastern States Platformer is the tenth to be placed on stream. Fifteen others are currently being designed or constructed. The first Platformer went into operation in the fall of 1949 at Muskegon, Mich., an operation of Old Dutch Refining Co.

Additional Platformer-Udex combination plants now under construction: That of Roosevelt Oil & Refining Co., to be completed by summer at Mount Pleasant, Mich., will have a charge capacity of 1,100 barrels per day. Another is Cosden Petroleum Corp.'s, now going up at Big Springs, Texas, which will have a capacity of 1,500 barrels a day.

**Formerly from Coal:** Benzene and other members of its popular family were once entirely by-products of coal coking. But when all the new petrochemical benzene plants cur-



the  
most important door



Every successful chemical company owes its continuing success to RESEARCH. Pure research, product application research, new product research—all are vital if a company is to keep abreast of the forward surge of the dynamic Chemical Industry. The fact that, since 1885, Stauffer has progressed until today it operates 35 plants in 15 states speaks volume for the efficiency and scope of its Research.

Stauffer's three Research Teams are located where they can be of most value to the chemical industry and to the improvement of Stauffer's products . . .

Eastern Research Division, Chauncey, N. Y.

Western Research Division, Richmond, Calif.

Agricultural Research Div., Mountain View, Calif.

Let Stauffer's chemists, engineers, entomologists, and plant pathologists aid you to solve your industrial and agricultural problems.

in the  
chemical industry

### stauffer products

BHC (Benzene Hexachloride)	Borax	Boric Acid
Boron Trichloride	Carbon Bisulphide	Carbon Tetrachloride
Caustic Soda	Chlordane	Chlorine
Citric Acid	Cream of Tartar	DDT (Dichlorine Diphenyl Trichloroethane)
Fire Extinguisher Fluid	Parathion	Potassium Nitrate
Rochelle Salt	Silicon Tetrachloride	Sodium Hydrosulphide
Sulphur—(Specially processed for all industrial and agricultural uses)	Sulphur—Insoluble (for rubber compounding and other uses)	Tartaric Acid
Sulphur Chloride	Tartar Emetic	
Textile Stripper	Titanium Tetrachloride	
Toxaphene		



## STAUFFER CHEMICAL COMPANY

420 Lexington Ave., New York 17, N. Y.  
221 N. La Salle St., Chicago 1, Ill.  
424 Ohio Bldg., Akron 3, Ohio  
Apopka, Florida

824 Wilshire Blvd., Los Angeles, Calif.  
636 California St., San Francisco, Calif.  
North Portland, Oregon  
Houston 2, Texas  
Weslaco, Texas



**Y**OU CAN actually purchase industrial gas in Oklahoma for 15¢ per million B.T.U. The rate for extra large quantities is even lower. While the actual rate varies, depending upon the location, type of service and quantity of gas required, your fuel costs are lower in Oklahoma. With known natural gas reserves totaling more than 11¼ trillion cubic feet and new sources exceeding present production discovered annually, you are assured of adequate gas for the future. A well organized system of pipelines extends to all sections of the state, assuring you of excellent service.

Gas is **CLEAN** — no smoke or soot. Low cost fuel . . . adequate reserves . . . excellent service . . . cleanliness of operation — a superior combination of long term advantages await you in Oklahoma. Compare this combination with that of your present location. The industrial gas in Oklahoma is also easily adapted to meet your requirements. Natural gas is easily controlled automatically, reducing your operating costs.

#### INVESTIGATE INDUSTRIAL GAS IN OKLAHOMA BEFORE YOU SELECT YOUR LOCATION

This superior combination of plenty of gas, excellent service, low cost fuel, automatic control, cleanliness of operation, gives you a profitable base for industrial production in Oklahoma. Supplementing this fuel is 55 billion tons of coal.

Send for a complete **confidential** survey report relating to your own business which will be promptly prepared by the Oklahoma Planning and Resources Board.



**Make More Money  
IN OKLAHOMA**

## PRODUCTION . . . . .

rently under construction are in operation, coal will be supplying only about half.

Eastern States has already closed a long-term contract with Dow Chemical to take the bulk of the new benzene output for its styrene production. And encouragingly, Eastern States Petroleum is being continually plagued by numerous prospective customers for a cut of its new products.

### Hot Solution

Like many other members of the process industry, American Perlite Corp. (Richmond, Calif.) was faced with the problem of eliminating dust from exhaust gases discharged to the atmosphere. Wool bags—formerly used for the purpose—had to be replaced frequently because they would not stand up under high temperatures. Now it has replaced the woolen bags with ones made of a silicone-impregnated glass cloth, is happily counting extra money in the bank.

In Los Angeles, as elsewhere, dust filtration operations were limited by the intense heat generated by the exhaust gases; the upper limit for cot-



**MACO FABRIC:** When failures occur, the seam's to blame.

ton or woolen bags is around 200 F., while exhaust temperatures of 2,000 F. or higher are often encountered. One solution was to reduce the exhaust temperature, but that called for elaborate equipment, was an expensive solution at best.

The high heat and corrosion resistance of glass cloth made it a potential substitute. Only trouble was that the glass cloth was too brittle for industrial purposes. Then Menardi and Co. (an El Segundo firm employed by the gray iron foundry industry to work on the smog problem) started an

extensive investigation. It developed the Maco process for impregnating glass cloth to form a fabric with different characteristics. The resulting cloth is smooth, silk-like, flexible and durable. But more important, its heat resistance range is practically double that for cotton or wool.

American Perlite is using about 500 bags made of Maco cloth to fit the Rees Blow Pipes it uses in the processing. Plant Foreman S. A. Dodson says the glass bags are more expensive than wool, but they result in over-all reductions because they can stand up under the 400 F temperatures in the bag room. Says he: "Not only do we save on replacements, but we don't have to cope with the former problem of heat reduction." Another saving comes in cleaning; the Maco cloth requires a minimum of shaking, thus reduces wear on the shakers.

Most of the bags first purchased by the company are still in use. When failures occur, according to Dodson, it's usually because of ripped seams rather than worn-out cloth. American Perlite's filter bags have an 8 in. diameter and are 6 ft. long, but the cloth can be made to the size ordered.

The fabric has been approved by the Los Angeles Air Pollution Control Commission for installations in the area. Tests by the Commission showed it to be 90% efficient in the filtration of gas having over 40% submicron particles, at temperatures up to 550 F.

### Safety Scorecard

Last week, the Manufacturing Chemists' Association weighed in with the safety record compiled by its membership during 1951. Using the method of the American Standards Association, the M.C.A. each year figures both the frequency and severity of industrial accidents among member companies.

The frequency rate for 1951—4.83 disabling injuries per million man-hours worked—was up slightly over 1950's 4.56. But the severity rate was down: In 1951, member companies lost 0.68 days per 1,000 man-hours worked (including time charges for deaths and permanent injuries); in 1950, the comparable figure was 0.76.

Both figures reflect a general downward trend, says M.C.A., and based on records of the National Safety Council, which reports on all industry, they are lower than comparable figures for any industry aside from aircraft manufacturing. Moreover, the records posted for the first two months of 1952 indicate the chemical industry may do even better this year; the frequency rate was only 3.86.



# WHERE

## does "pioneering" stop?

Well... we can tell you that with us it never stops.

Even after developing low-cost tannage ozone, Welsbach continues to "pioneer" in ozone research... extending Welsbach know-how to help potential users find the effective application of ozone to their particular problems.

The numerous commercial applications of Welsbach Ozone are conclusive evidence that it is fast becoming the preferred oxidant. In chemical processing, in industrial waste treatment, in water purification—in fact, wherever an oxidant is required—Welsbach Ozone should be considered. And Welsbach engineering know-how is at your service... when and if you want it.

If oxidation is a step in your process, investigate Welsbach Ozone. It is a truly low-cost, efficient oxidant... with these plus features:

No storage problem; no procurement problem; no materials handling.

No full-time supervision or labor required.

Generated at point of use with equipment requiring little space.

And constant, predictable operating cost.

**INCREASE YOUR PROFIT**

by lowering costs with  
economical, dependable

Write for information to

**THE WELSBACH CORPORATION**

ZONE PROCESSES DIVISION

2409 W. Westmoreland St. • Philadelphia 29, Pa.

**WELSBACH**  
ZONE

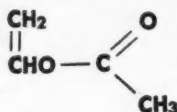
Pioneers in Continuing Ozone Research

**Niacet**  
TRADE-MARK

Unpolymerized

**VINYL  
ACETATE**

Monomer



NIACET Vinyl Acetate is the stabilized monomer, boiling range 71.8 to 73°C. It can be polymerized to form resins with exceptional bonding qualities for wood, glass, metals, and fibers. Vinyl Acetate can also be used for the synthesis of:

Monochlorethyl Acetate

Dichlorethyl Acetate

Chloracetals

2-Aminothiazole

Chloracetaldehyde

and many others. NIACET Vinyl Acetate is shipped in 410 lb. drums and 62,500 lb. tank cars.

For further information write to:

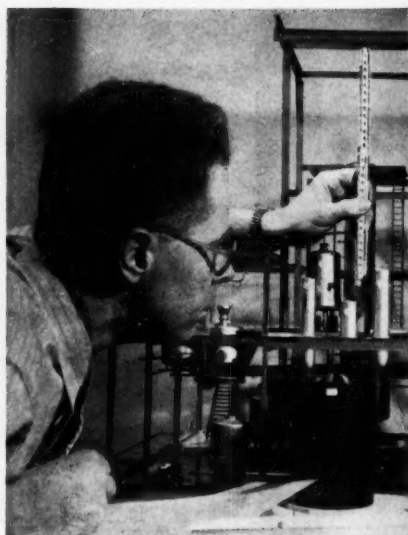
**Carbide and Carbon Chemicals Company**

A Division of Union Carbide and Carbon Corporation



30 East 42nd Street, New York 17, N. Y.

"Niacet" is a registered trade-mark of Union Carbide and Carbon Corporation



HELSTON AND MODEL: Changes

## Plants in Miniature

Doing things on a big scale may be the American tradition, but sometimes it pays off to try it on a small scale first. At least that's what Canadian Industries Ltd. is finding out from a 3/4 in.-to-1 ft. scale model of its projected nylon intermediate plant at Maitland, Ont.

C.I.L. isn't the only one to build scale model plants. Production executives and design engineers, always attentive to ways of eliminating bugs, cutting costs, speeding design on commercial plants are currently giving the miniature plants a big play. Du Pont, for example, has used them extensively for some time. And the Industrial Model Co. (Del.) specializes in them, has recently built a scale model of twin crude distillation units at the No. 1 plant of Standard Oil (Ohio) in Cleveland.

What's more, the scale models don't come cheap by any means. C.I.L.'s has cost the company about \$30,000; Standard Oil's about \$3,500. But they open up chances for sizable dollar savings in the long run. As Scale Model Specialist\* Earl Helston, sitting in his Montreal office, told CW last week: "We will make worthwhile savings on fittings alone."

**Time Saver:** Scheduled for completion in the first half of next year, the Maitland plant will be made up of six process buildings to turn out the basic chemicals for making nylon filament yarn and staple fiber. The model plant encompasses all six buildings, is probably the biggest ever built for a Cana-

\* His official designation in C.I.L.'s industrial engineering department.

## Are your **CHEMICAL INTERESTS** *Closely Held or* *Family Owned?*

This bank specializes in chemical financing, particularly in connection with closely held or family owned companies.

We believe in the soundness of the American chemical industry and its prospects for growth and will look sympathetically upon companies or individuals who have financial problems in this field.

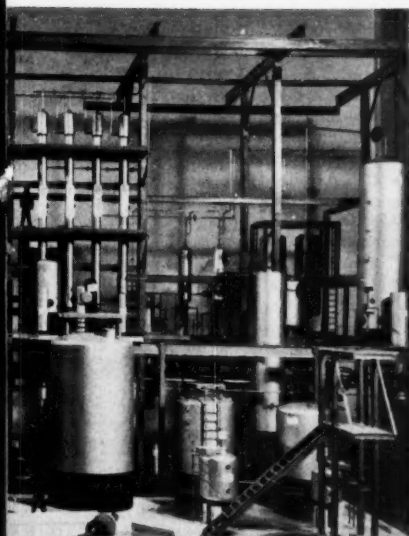
*Chemical Department*

**Empire Trust Company**

120 BROADWAY, NEW YORK, N. Y.

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION





made before the money stage.

dian process plant. It will knock considerable time off the normal planning time for so complex a structure.

Where it's paid off particularly, according to Helston and F. S. McCarthy (who is responsible for the engineering aspects of the plant), is in laying out costly stainless steel piping arrangements. "It helped us to establish the 'lane system' in our piping," says Helston. "Instead of merely running the shortest distance between two points, some of our pipes run north and south; the others, east and west. Then too, in one of our buildings we originally planned all our automatic control valves for the first floor. The model showed us right off there'd be congestion, so we shifted some of the controls to the second floor."

Helston figures the models present their biggest saving dollar- and time-wise through the elimination of unnecessary drafting. Says he: "Changes are made right on the model. Why, in planning our Brownsburg office, we had the final layout confirmed within two weeks of our first conference around the model. No detail drawings were needed."

The miniature plant has proved useful in other ways also. At Maitland, a Canadian Government inspector approved the safety arrangement after a fifteen-minute study of the model. And it gave the contractor, Fraser-Brace Engineering Co., Ltd., a better idea where equipment would go. Moreover, later on, when installations are made, C.I.L. employees will be job-trained from the model. Explains Helston: "That way, they can get a better idea of controls. It's the old case of showing

## OLEATES . . . .

. . . . glyceryl monoesters for food and drug emulsification.

. . . . glycol monoesters for emulsifying dormant oil sprays, oil and solvent polishes, and water emulsion paints.

. . . . polyethylene glycol esters for thickening electrolyte solutions, emulsifying insecticides and making soluble oils.

Application to *your* problem may be suggested by studying the properties of these materials—as outlined in our booklet "Esters by Glyco."



**GLYCO PRODUCTS CO., Inc.**

**26C COURT STREET  
BROOKLYN 2, N.Y.**

# Introducing a New, Rugged All-Crinkled Bag

# TUFPAK



Here's a really tough multi-wall bag that will protect your product and save you money. Consider these TUFPAK features:

- 2 to 6 plies extra-strong crinkled kraft paper.
- Made to order in any combination of plain . . . wet-strength . . . wax-treated . . . waterproof . . . mesh-reinforced . . . or polyethylene coated plies. Polyethylene liner also available.
- The *only* all-crinkled bag supplied in 10" to 44" widths.
- Resilient and flexible—absorbs shock, rough handling.
- Creped surface takes slip and slide out of stacking.

TUFPAK—the ideal shipping container for chemicals, foods; powdered, granulated, or crushed products.



## NATIONAL WATERPROOF PAPERS, INC.

Manufacturers of Protective Papers,  
Liners and Bags Since 1903

102 Beckett Street  
Camden 3, New Jersey

*Send coupon below  
for sample bag  
and complete information*

National Waterproof Papers, Inc.  
102 Beckett St., Camden 3, N. J.

Please send me a sample bag and full details on TUFPAK as indicated below:

Product to be packed . . . . .  
Size of Bag . . . . . Wt. of Contents . . . . .

Company . . . . .

Address . . . . .

Individual . . . . .

(Please Print)



REG. PAT.

## PRODUCTION . . . . .

instead of doing a lot of talking."

He adds that all levels of management can see things more quickly from a three-dimensional layout, argues, "Even my wife could suggest improvements from one of these." He finds it's the quickest way to plan and record changes, feels working over the model speeds up correlation of maintenance, production and safety efforts.

"In building any plant," says Helston, "there is always the tendency towards a 10% error in planning. Models reduce that costly 10%. You can make your changes right on the model before you reach the money stage of production."

## EQUIPMENT . . . . .

**Jet Cleaner:** Sellers Injection Corp. (Philadelphia) is introducing its jet cleaning unit to throw a solid stream of hot chemicals and provide a separate jet of water. The company figures it will fill the bill in many two-step cleaning operations for removing paint and other stubborn films. The chemical jet sends out a 150 gal. per hour jet of hot detergent or solvent, will deposit a film as far as 20 ft. away. In the same unit, a separate hose and nozzle throws a stream of water effective at distances up to 35 ft. The new units come as either wall-mounted or portable units.

**Boiler Feeds:** Built for use with its Steam-Pak generators, feedwater systems for industrial boilers are being marketed by the Industrial Division of York-Shipley, Inc., (York, Pa.). The system automatically supplies hot make-up water for boiler operation, is said to operate efficiently with any type of steam boiler. The complete system consists of four kits: make-up assembly, heater assembly, receiver assembly and pump assembly; each kit can be purchased separately. York-Shipley figures that addition of preheated condensate water will prolong the life of the boiler. And it adds that, aside from fuel savings, hot make-up water avoids stress caused by applying cold water to hot surfaces.

**Low-Pressure Laminates:** Dow Corning has recently developed a method for a low-pressure lamination of silicone-glass. Using glass cloth and a Dow Corning silicone resin, the material is molded at pressures ranging from 3 to 30 psi.; will withstand continuous exposure to temperatures up to 500 F., intermittent exposure up to 900 F. Dow Corning says physical and electrical properties are comparable to those of conventional high-pressure silicone-glass laminates.



## Uniform Results—you'll get them with Pittsburgh PX Plasticizers, too!

You're always sure of the "pedigree" of Pittsburgh PX Plasticizers. For, as a basic and integrated producer of vital coal chemicals such as phthalic anhydride, benzene and xylene, we have the important advantage of controlling and maintaining the high *quality* and *uniformity* of our plasticizers from coal to finished products. And that advantage benefits you in three important ways: in dependable, continuing supplies . . . in


better performance and ease of use in your formulations . . . and in finished products that are more durable and useful.

Today, you'll find more and more coal chemical products of the Pittsburgh Coke & Chemical Company at work in both peacetime and military production . . . products that are recognized above all else for their *dependability*.

PX-104	DiButyl Phthalate
PX-108	DilsoOctyl Phthalate
PX-138	DiOctyl Phthalate
PX-208	DilsoOctyl Adipate
PX-404	DiButyl Sebacate
PX-408	DilsoOctyl Sebacate
PX-658	TetraHydroFurfuryl Oleate
PX-917	TriCresyl Phosphate

W&D 3931

PLASTICIZER DIVISION



# PITTSBURGH

## COKE & CHEMICAL CO.

Grant Building • Pittsburgh 19, Pa.

COAL CHEMICALS • AGRICULTURAL CHEMICALS • PROTECTIVE COATINGS • PLASTICIZERS • ACTIVATED CARBON • COKE • CEMENT • PIG IRON

# How Mississippi Chemical

## They did

Mississippi Chemical had a series of *over-all* electrical problems when they were planning this plant.

## what

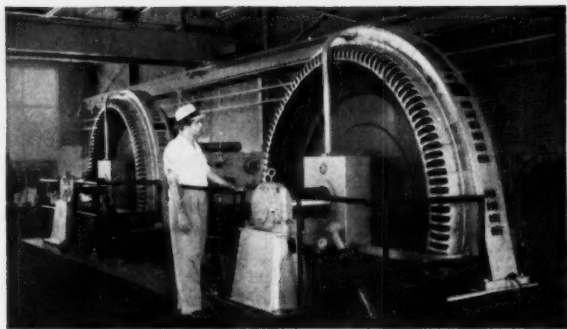
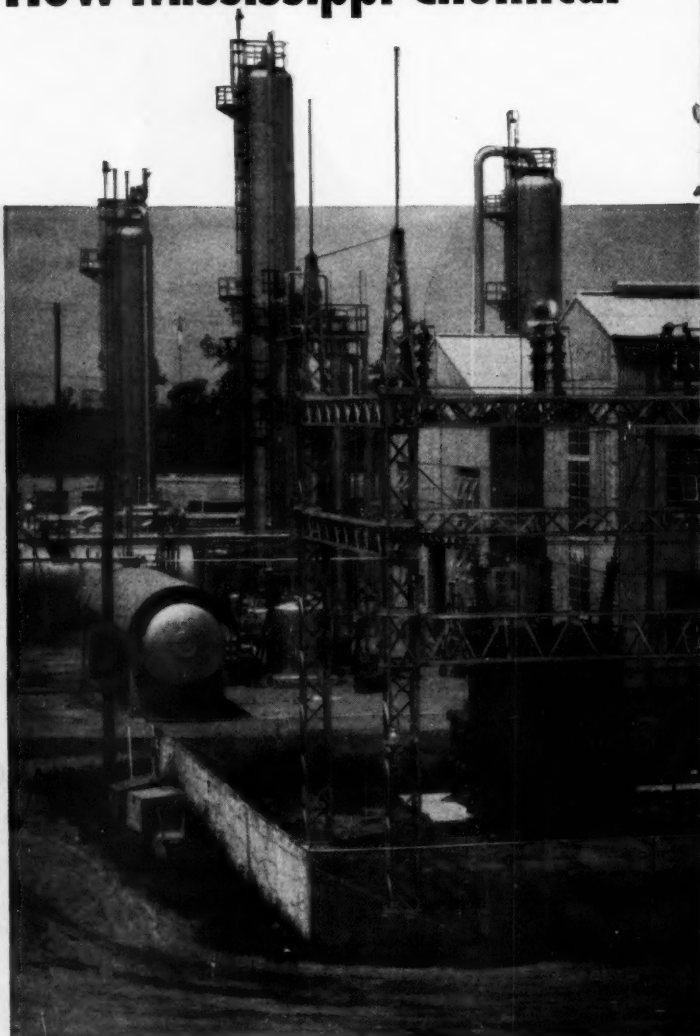
They had Girdler and Westinghouse Engineers *attack these problems as a whole*. Based on previous experience they put together a *co-ordinated electrical system*.

## you can do

This experience and this over-all method can be applied to your next project, whatever it is. Westinghouse can work with you on *all* your electrical needs.

## to produce more

The result will be more dependable production . . . lower costs . . . better operations. Whether you need one motor, or a complex electrical system, call in Westinghouse.

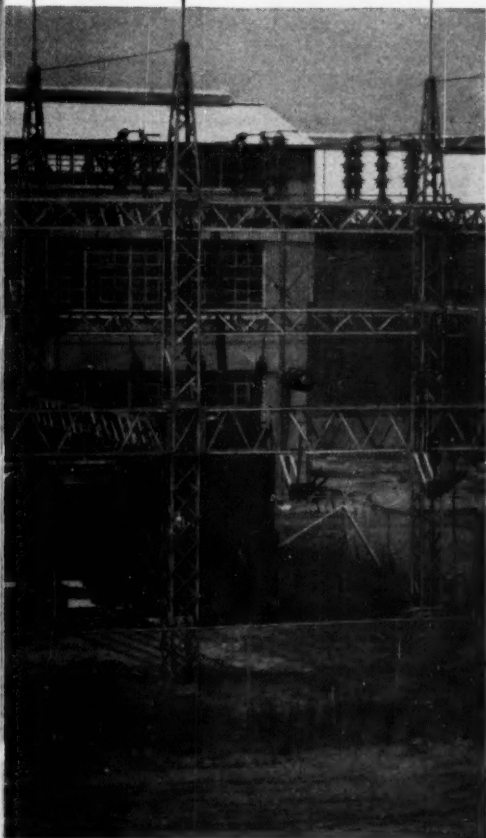


Ammonia Superintendent inspects the 900-hp hyper compressor in the ammonia compressor room. Driving this compressor and all the other drives in the plant are Westinghouse Motors. These motors have a lower installed cost . . . are easier to operate . . . and require less maintenance than other types of drives.



# got the BEST power equipment . . .

## at no EXTRA cost!



Mississippi Chemical Company recently built a new plant in Yazoo City, Mississippi. For the electrical engineering, Westinghouse and the Girdler Corp., the engineers and prime contractors, put their heads together. By careful planning they developed a power system that uses the best type of modern equipment *but at no extra cost*. They made savings that offset the higher price. Here's how they did it.

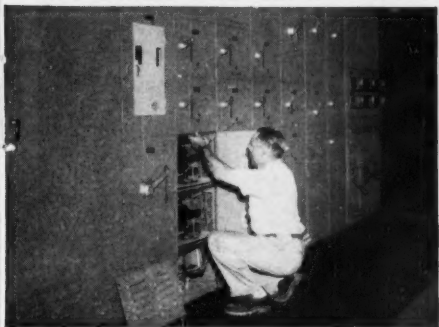
**Dependable, Low-Cost Power.** To make use of the low-cost power available from the Mississippi Power and Light Company, a complete Westinghouse Substation was installed. Included were two 6000/7500-kva transformers. This rating permits line-starting of the large compressor motors and eliminates the need for costly special controls. The best secondary voltage was determined to be 2400/4160Y-volts. This reduces the size of the copper wire . . . keeps line losses at a minimum . . . and can be easily handled by standard transformers.

**Top Motor Performance and Protection.** For the main compressor drive, they chose electric motors because they have a lower installed cost . . . are easier to operate . . . and require less maintenance than other drives. The motor control centers were installed throughout the plant in non-hazardous locations. They got the advantage of grouped control without using more expensive, explosion-proof equipment.

**Emergency Power Assured.** For insurance purposes, an immediate source of stand-by power was required. Neither a combustion engine nor a condensing turbine met the requirements of fast, easy operation. However, a Westinghouse Type E turbine did the trick. It could be started by one man . . . reach full operation in 20 seconds . . . and it costs 25 percent less than any other adequate unit.

**Westinghouse Can Help You.** The next time you plan to build or expand your plant, call in Westinghouse. You can get these same benefits . . . the results of accurate system planning and dependable Westinghouse equipment. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania.

J-94902



Shown here is a Westinghouse Power and Control Center which supplies the power for the motors in the ammonia plant. These power and control centers are installed throughout the plant in nonhazardous locations to take advantage of grouped control.

YOU CAN BE SURE...IF IT'S

# Westinghouse

**ELECTRICAL EQUIPMENT  
FOR THE CHEMICAL INDUSTRY**



# DISTRIBUTION..

## Forced To Look...

## ... Then Complete Overhaul

"We were forced to look at all of our packages, and we found in many cases substitutes cheaper than the ones then being used."

These are the words used by Edward R. Hamm, head of Sharp & Dohme's package development department, to describe what started as a simple attempt to provide protection against shortages in normal packaging materials. From this humble beginning the program has developed into a complete overhaul of the company's packaging operations.

**Hedging Shortages:** Not so long ago, when the possibility of serious shortages occurring in many packaging materials was anything but remote, Sharp & Dohme decided it would be a good idea to have on hand complete use data on possible substitutes. But to do this effectively it became apparent that the company's entire schedule of packaging materials—what is used where and why—would have to be studied and codified.

Hamm, and his assistant H. Earl Mack, set up a detailed cross-reference system. It has three separate listings:

- Alphabetical list of the company's products, coded.
- Cross-reference to a complete series of special package specification sheets which list everything that goes into a single product's package.
- Cross-reference to a third listing by the individual packaging material, such as a specific type of cap, bottle or carton. Under each type are listed the products that utilize this particular material.

Thus it is simple to look up the code designation of a product and check what materials are used in its packaging, or look up a material and check where it is used, or determine where any combination of materials are used. In looking for substitutes all these factors are important in deciding whether or not a particular material is a feasible replacement, what complications it involves in the over-all picture, and just how important a particular material is.

It works like this. If the company runs into a shortage of, say, metal caps, Hamm goes to the reference manual. There he finds out just where these caps are used, how many items

use them, what other materials would possibly have to be replaced too.

Then all available substitutes are obtained and sent to the research laboratories. Tests are run to determine if the various substitute materials are compatible with the many products they will be used with, or with the other packaging materials involved.

When a substitute is approved, production, control and purchasing are advised of it in case regular materials do fail. The new material is assigned a code number and entered into the cross reference manual.

**By-Product Bonanza:** Important as the substitute program is at Sharp & Dohme, of even greater importance, perhaps, is the standardization and efficiency program that has grown out of it.

Sharp & Dohme makes about 600 specific products with 4,500 packaging components, such as labels, vials, caps, cartons, bottles, etc. In the drive for possible substitutes, the company found not only that there were substitutes that could be used just as well as its standard materials for less money, but that its entire line of packages, and its packaging methods, were shot through with inefficiency and duplication.

It found that 28 bottles, carefully selected, could do all the work that the former line of 63 could do. It found that by using printed cartons on straight-line production in place of pasteboard boxes which were run on a semi-automatic basis, savings of 50% to 70% in the cost of making the boxes could be realized. By substituting vinyl plastic for latex rubber in plasma units, a saving of \$20,000 a year was effected.

Not only did standardization save money on materials, but also on the actual production line. With too many different bottles, too many labels, too many neck sizes, there were far too many short runs and change-overs. With one simple change from a gummed label to a thermoplastic one, the company estimates it will save \$10,000 a year by being able to use automatic instead of hand labeling.

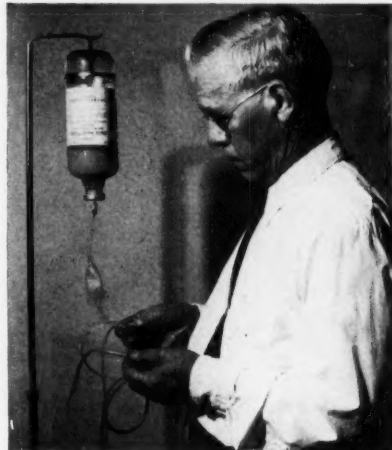
Other savings: change from tin to vinyl-coated black plate for caps, saved \$6,000; shift to synthetic rubber stoppers saved \$1,160; change from pure tin tubes saved \$26,000 a year.



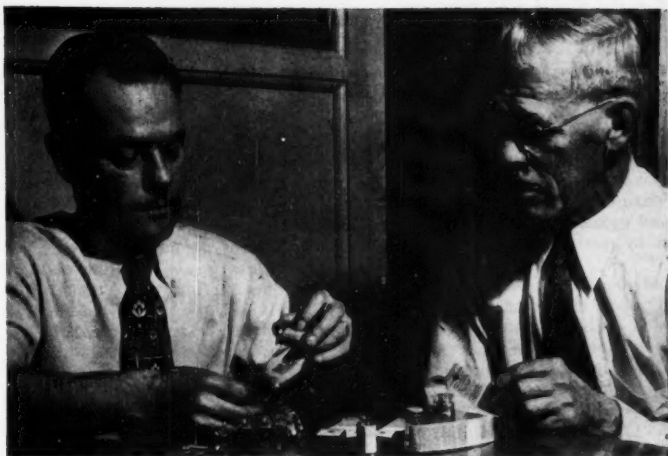
**1** SLOW HAND LABELING was spotlighted during substitute material search.



**4** HODGE-PODGE of 63 bottles also came to light during substitute search.



**7** SHORTAGE of latex brought vinyl replacement. Saving: \$20,000 a year.



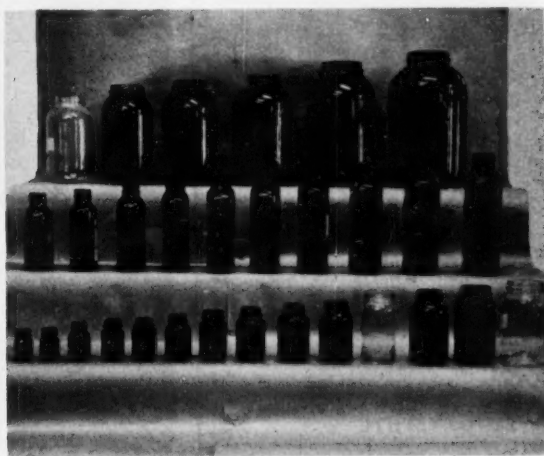
**2** KING-SIZE LABEL on small bottle was the problem. S & D's Sinton and Nack worked out automatic operation with thermoplastic labels, heat sealing.



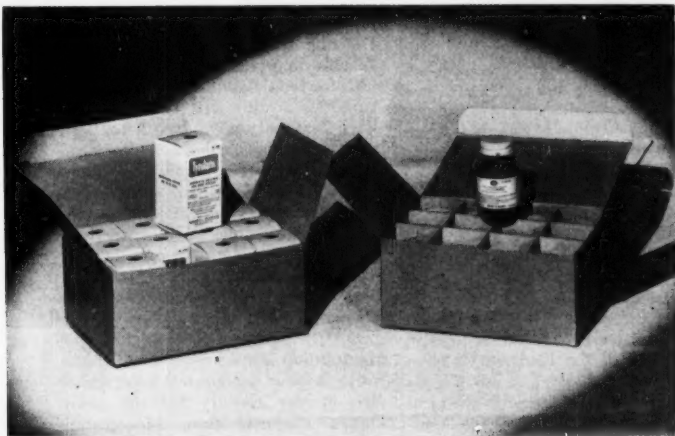
**3** INSTALLATION of thermoplastic labelling machine may save \$10,000.



**5** CAREFUL TESTING was undertaken to determine accurately which bottles were best, which wasteful or unnecessary.



**6** STANDARD line of bottles for company's dry line is result, with only 28 instead of the 63, and better packing qualities.



**8** DESIGNING shelf packs so that same size will take cartoned and uncartoned bottles resulted in more saving, fewer box styles.



**9** CROSS REFERENCE records keep tabs on all packages and substitutes.

# Mono Laurates Di

of

- DIGLYCOL
- ETHYLENE GLYCOL
- DIETHYLENE GLYCOL
- POLYETHYLENE GLYCOL

- 
- PROPYLENE GLYCOL
  - POLYOXYETHYLENE
  - BUTOXYETHYL
  - GLYCERINE

MADE TO MEET YOUR  
SPECIFICATIONS

THE FLAME AND THE FLASK—SYMBOL OF QUALITY



**The C.P. Hall Co.**  
CHEMICAL MANUFACTURERS

5147 W. 67th Street, Chicago 38, Illinois

AKRON, OHIO  
CHICAGO, ILL.

NEWARK, N. J.  
LOS ANGELES, CAL.

## DISTRIBUTION . . . . .

### Markets, Not Products

The recent reshuffling at Antara Chemicals Division of General Dyestuff Corp. has turned the entire Sales and Technical Departments' operating procedure inside out from top to bottom. New Picture: Division of responsibilities, and entire table of organization, is now by markets rather than products.

Not only has this revamping necessitated many important home office personnel changes, but actually a fundamental change of sales atmosphere and approach throughout the vast organization.

**Experience Points:** Harold Shelton, Antara's sales manager, points out that the division's original organization was



ANTARA'S SHELTON: Selling by markets is the modern way.

set up on a product basis; e.g., salesmen and sales executives for, say, Antarox A. Now the division's experience is pointing emphatically at the desirability of the orientation by markets; e.g., salesmen and sales executives for "leather chemicals."

Basically Antara's experience has been this—the continuing broadening of the market for any single chemical until it becomes all but impossible for any one man to be even superficially familiar with all its possible uses.

By organizing instead around the basic markets, the job of being an expert is greatly simplified. It is obviously easier for a man to understand the field of leather chemicals than to understand all the fields in which a certain chemical may find use. This is particularly true in modern chemical selling where knowledge of the "end-use" applications of a product is essential.

When salesmen just "sold," the matter was not so serious, says Shelton; but today the salesman's "service" function is increasing daily. He is now expected to know how to use his product, where, when, why, etc. This means he is an expert, and experts must concentrate on one small area where they can make use of correlation and principles to aid their factual knowledge.

**Development:** Perhaps the greatest single gain from the new system, says Shelton, will come in commercial development. Antara's technical departments, closely knit to the sales department, have the primary function of finding new uses for established products, and solving customers' troubles. For this type of work the market organization set-up is far superior. Not only is it more flexible, but by having salesmen who know their field, problems can come to the laboratory in much better shape for solution.

That is Antara's idea—specialists in chemical market areas all the way down to the salesman himself.

**Insulin Tax:** The tax bureau of Syracuse, N. Y., has just ruled that insulin is subject to a retail tax, unless purchased by prescription.

The city's contention is that insulin cannot be classed as a food, which would exempt it, and that people who purchase it without a prescription stand on no better legal footing than those who purchase patent medicines.

**Western Agent:** Kessler Chemical Co., Philadelphia, Pa., has appointed the A. G. Lilla Co., San Francisco, western agent for its complete line of fatty acid esters.

**Detergents:** Distribution of Diamond Alkali's detergents and related chemicals for family and commercial power laundries, institutional laundries, and linen supply plants, has now been undertaken in northern and central Ohio by the M & L Supply Co., Akron.

**New Office:** Jackson, Miss., is the site of the newest office of the American Mineral Spirits Co. Amoco's line of technical naphthas and petroleum base solvents will be distributed from the new office.

**Montecatini:** The Chemore Corp., New York, is now the general representative in this country for the giant Italian chemical firm, Montecatini Societa Generale per l'Industria Mineraria e Chimica.





Commercial Solvents Corporation, a leader in the field of petrochemicals, has stepped up production of synthetic methanol at its Sterlington Plant in Louisiana to an all-time high.

Output will be still further increased upon completion of additional units now under construction at Sterlington. Scheduled to be in operation by the spring of 1953, the new \$20,000,000 facilities will double both methanol and ammonia output.

High-quality CSC methanol, produced from natural gas, is being supplied at a minimum purity of 99.85% in tanker, barge, tank car, tank truck and drums to all parts of the United States from conveniently located bulk and distribution points. For further information contact the Industrial Chemicals Division, Commercial Solvents Corporation, 17 East 42nd Street, New York 17, N.Y.

INDUSTRIAL CHEMICALS DIVISION

**CSC**  
**COMMERCIAL SOLVENTS CORPORATION**

ACIDS • ALDEHYDES • ALCOHOLS • ESTERS • AMINES • AMINO ALCOHOLS  
NITROGEN COMPOUNDS • NITRO COMPOUNDS • SOLVENTS • PLASTICIZERS • INTERMEDIATES

April 26, 1952 • Chemical Week

**O & C**

# **TOLUOL BENZOL—XYLOL Solvent NAPHTHAS**



Manufactured in our Houston  
Texas (Galena Park) plant

## **OIL & CHEMICAL PRODUCTS INC.**



NEW YORK: 295 Madison Ave., Murray Hill 6-0785  
HOUSTON: City National Bank Bldg., Charter 4747

**BORAX & BORIC ACID**  
**PYROBOR**  
 Dehydrated Borax  
**LITHIUM CARBONATE**  
 Technical  
**PENTAHYDRATE BORAX**

**TRONA**  
 Muriate and Sulphate  
 of  
**POTASH**  
 Desiccated  
**SODIUM SULPHATE**  
 Sodium, Potassium  
 and Ammonium  
**BROMIDES U. S. P.**  
**BROMINE**  
**SALT CAKE**  
**SODA ASH**

### **AMERICAN POTASH & CHEMICAL CORPORATION**

122 EAST 42nd STREET

NEW YORK 17, N. Y.

38 SO. DEARBORN STREET  
CHICAGO 3, ILLINOIS

214 WALTON BUILDING  
ATLANTA 3, GEORGIA

3030 WEST SIXTH STREET  
LOS ANGELES 54, CALIF.

## **BOOKS . . . . .**

**Heat and Thermodynamics**, third edition, by Mark W. Zemansky. McGraw-Hill Book Co., New York, N.Y.; xiv+465 pp., \$6.

An introductory text to the fundamentals of heat and thermodynamics for students of physics, chemistry and engineering. The current edition retains original organization and scope of first book, but gives more coverage to the temperature concept, laws of thermodynamics, phase rule and various experimental methods.

**Glass**, by J. Home Dickson. Chemical Publishing Co., Inc., New York, N.Y.; 300 pp., \$6.

The work of eight contributors, this book divides its subject matter into four major topics: the physics and chemistry of glass, the technology of glass, primary applications, and an appendix on the spectral transmission of glass. A combined index and glossary is included.

## **MEETINGS . . .**

**Amer. Ceramic Soc.**, annual meeting, Pittsburgh, Apr. 27-May 1.

**Amer. Oil Chemists' Soc.**, annual meeting, Shamrock Hotel, Houston, Apr. 28-30.

**Amer. Drug Manuf. Assn.**, annual meeting, Homestead Hotel, Hot Springs, Va., Apr. 28-May 1.

**Div. of Rubber Chemistry**, Cincinnati, Apr. 30-May 2.

**Electrochemical Soc., Inc.**, spring meeting, Benjamin Franklin Hotel, Phila., May 4-8.

**Div. of Gas & Fuel Chemistry**, Pennsylvania State College, Pa., May 5-6.

**Natl. Air Pollution Symposium**, Huntington Hotel, Pasadena, Calif., May 5-6.

**Greater Chicago Safety Council**, annual Midwest safety show, Congress Hotel, Chicago, May 5-8.

**Tech. Assn. of the Pulp & Paper Ind.**, Sherman Hotel, Chicago, May 5-8.

**Scientific Apparatus Makers Assn.**, annual meeting, Edgewater Beach Hotel, Chicago, May 6-9.

**Natl. Lime Association**, golden jubilee convention, the Homestead, Hot Spring, Va., May 8-10.

**Soc. of Cosmetic Chemists**, spring meeting, Biltmore Hotel, N.Y., May 15.

**Inst. of Paper Chemistry**, annual executives' conf., Appleton, Wisc., May 15-16.

**Amer. Soc. of Quality Control**, Syracuse, N.Y., May 22-24.

**Chemical Week • April 26, 1952**

DU PONT CHEMICALS YOU SHOULD INVESTIGATE:

# SODIUM

**Important reagent for reduction,  
Polymerization, Condensation, Hydrogenation,  
and Dehalogenation Reactions**

Although sodium is a highly reactive chemical, it can be handled with ease, and its versatile reactions can be readily controlled. Sodium can be used in the solid or molten forms or can be converted into a finely divided dispersion in inert media. Sodium dispersions can be handled as fluids at ordinary temperatures and are particularly useful in reactions at temperatures below the melting point of sodium (97.7°C.) Use of highly reactive sodium dispersions reduces cycles and increases yields in organic reactions—even with less than usual agitation.

## TYPICAL ORGANIC-SODIUM REACTIONS

**Reduction** . . . Esters to alcohols . . . nitriles to amines . . . fatty esters to keto alcohols and acyloins . . . and aromatic hydrocarbons such as naphthalene to 1,4 dihydronaphthalene.

**Refining Hydrocarbons** . . . Inert hydrocarbons such as naphthalene can be refined with less than 1% by weight sodium. Use of sodium dispersions reduces cycle to minutes with little or no agitation.

**Claissen Condensation** . . . Sodium dispersions produce striking results in Claissen condensations such as the preparation of aceto acetic ester by self-condensation of ethyl acetate.

**Preparing Alcohol-Free Alkoxides** . . . Sodium alkoxide solutions or slurries can be readily prepared by treating sodium with an excess of alcohol.

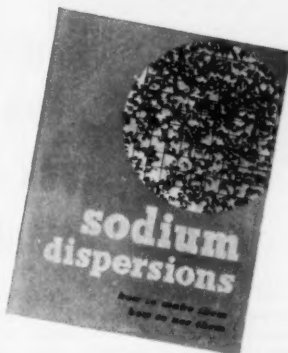
**Halide Condensation** . . . Sodium can be used in the condensation of alkyl or aryl halide, such as in the preparation of decane from amyl chloride.

**Polymerization Catalyst** . . . Sodium is useful as an active catalyst in many polymerization reactions, including the preparation of butadiene-type synthetic rubbers.

E. I. du Pont de Nemours & Co. (Inc.)  
Electrochemicals Dept.—Wilmington 98, Del.

## SODIUM DISPERSIONS

- What they are
- How to make them
- How to use them



Get all the facts on sodium dispersions from the pioneer of the field! A new Du Pont booklet fully describes how sodium dispersions can be readily produced in your plant . . . and how this highly reactive form of sodium can be used to improve efficiency in sodium-organic reactions. Use the coupon below for your free copy.

**DU PONT  
SODIUM**



REG. U.S. PAT. OFF.

**150th Anniversary**

**BETTER THINGS FOR BETTER LIVING  
... THROUGH CHEMISTRY**

### Mail this coupon for more information

Please send me detailed information on metallic sodium—properties, applications, advantages, method of handling. I would like to investigate metallic sodium for the following applications:

- |  |   |
|--|---|
| <input type="checkbox"/> Organic Reductions      | <input type="checkbox"/> Sodium Dispersions Booklet       |
| <input type="checkbox"/> Refining Hydrocarbons   | <input type="checkbox"/> Preparing Alcohol-Free Alkoxides |
| <input type="checkbox"/> Claissen Condensation   | <input type="checkbox"/> Halide Condensation              |
| <input type="checkbox"/> Polymerization Catalyst |   |

Name \_\_\_\_\_ Title \_\_\_\_\_

Firm \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

# Locate in the area proved by test—

—where chemical plants  
have poured  
a stack of dollars  
over 59 miles tall!

In the Valley of the Ohio—the "American Ruhr"—is a newly-developed resource-rich section which has attracted companies from the "Blue Book" of American industry. Here the chemical industry alone, with supporting utilities and other related plants, in the past ten years, has invested \$750,000,000. on new plants—a stack of dollar bills over 59 miles tall!

Here is found the economic atmosphere essential to profitable production, particularly in chemical and related fields.

**EFFICIENT TRANSPORTATION.** The area is well covered by the Baltimore & Ohio with service lines feeding vital markets of the Nation.

**SKILLED LABOR.** Plenty of America's native sons and daughters provide an unusually stable pool. Turnover is unbelievably low.

**AMPLE POWER.** Nine modern plants, able to produce more than two million kilowatts, serve the area.

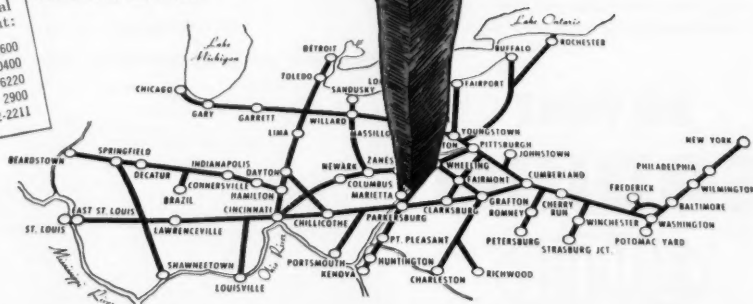
**ABUNDANT COAL.** Some of the world's greatest bituminous deposits lie in and near the area.

**GAS RESERVES.** Pools lie on the western side of the valley and in Marshall County, West Virginia—an estimated 25 billion cubic feet.

Here, too, are vast oil reserves, some of the finest salt and brine deposits in the Nation, and an exceptional supply of ground and surface water. Any chemical company interested in a plant site knows the Ohio River Valley offers great plant location potentialities. *The plants operating there now are proof.* As we have done for them, our Industrial Development Staff will prepare in confidence and without cost or obligation, a plant location study drawn to your specifications. *Ask our man!*

Write or phone our Industrial Development representatives at:

New York 4.	Phone Digby	4-1600
Baltimore 1.	Phone LExington	0400
Pittsburgh 22.	Phone COrt	1-6220
Cincinnati 2.	Phone DUnbar	2900
Chicago 7.	Phone WAbash	2-2211



## BALTIMORE & OHIO RAILROAD

Constantly doing things—better!



# SPECIALTIES . .



**DISHWASHING WITH LIQUID SYNTHETICS:** For the pan, several drops; for the maker, several million.

## Dollars in the Dishpan

Sales vaulting 70% over last year—and a stunning 43-fold in four years—put household liquid synthetic detergents in the \$15 million per year bracket.

Nationwide sales leader is Procter and Gamble's Joy, though spot checks show Babbitt's Glim, second nationally, leading in some areas.

Dispenser premiums, coupon offers, and packaging gimmicks are used as makers skirmish for first in regional sales.

**Billowing into an \$15 million business** in a little more than five years, liquid synthetic detergents are the swiftest growing segment of the soap and detergent business. There's been a 70% increase in liquid detergent sales in the past year alone.

Sitting on top of the heap nationally is Joy, Procter and Gamble's sudser first distributed countrywide in April, 1951 (CW, Mar. 24, '51). It's not a runaway everywhere, though. Babbitt claims that just-finished spot checks show Glim (introduced in 1946 by General Aniline and Film's Antara division\*), second nationally, outsells anything 6 to 1 in Washington, and some West Coast stores say it has a 2 to 1 lead there.

A number of other makers is scrambling for part of the market that now

amounts to over 34 million pounds yearly: American Stores Co., Philadelphia (Speedup); Lehigh Chemical Products, Chestertown, Md. (Anderol or Hy-Suds); Lincoln Industrial Chemical, Lincoln Park, Pa. (Alli); Michigan Chemical Corp., St. Louis, Mich. (Twinkie); Newell-Gutrad, San Francisco (Sky); Sinclair Manufacturing Co., Toledo (Sprite); Tern, Inc., New York (Tern) are a few.

**Tricks in the Trade:** P&G's heavy advertising budget has made the going rough for competitors of Joy. At first, rivals welcomed trumpeting about synthetic liquid detergents, figured the whole trade would profit by the publicity. But Joy seemed to walk in and monopolize the market.

Coupon deals jacked up Joy sales in the Midwest; the same gimmick was successfully tried by some chain-store-label brands too (National Tea's Easy Life, for example).

Babbitt has been throwing in a free

\* B. T. Babbitt reportedly paid a cool million for the Glim trademark in 1948; long-term contract provides for GAF to continue to make it; Babbitt to market, distribute, promote it.

INDUSTRIAL  
AROMATICS  
DEODORANTS  
GERMICIDES  
FUNGICIDES  
PRESERVATIVES  
ANTI-SKINNING AGENTS

for  
TEXTILES  
PAINTS—ADHESIVES  
PAPER—PLASTICS  
SOLVENTS—RUBBER  
and other chemical industries

**SINDAR Corporation**

Industrial Aromatics and Chemicals

330 West 42nd Street  
New York 18, N. Y.



**ANIMAL OILS**



**VEGETABLE OILS**



**FATTY ACIDS**

**AND HEAVY CHEMICALS**



**Welch, Holme & Clark**  
COMPANY INC.

439 West Street, N. Y. 14, N. Y.  
Warehouses in N. Y. and Newark, N. J.

**DIPHENYLTHIOCARBAZONE**  
(DITHIZONE)

Reagent for Co, Cu, Pb and Hg.

**PHENOLSULFONPHTHALEIN**  
(PHENOL RED)

For estimation of Renal Function, Also as indicator

**THYMOLPHTHALEIN**

As pH indicator and test for blood

**BENZIDINE DIHYDROCHLORIDE**

Reagent for test for blood

**PROPYL GALLATE**

An anti-oxidant for edible animal fats

Our research department has solved the synthesis of such complicated organic chemicals as PHENYLEPHRINE HYDROCHLORIDE U.S.P., TETRACAINE U.S.P. & METHONIUM HYDROBROMIDE pharmaceutical grade. We will be glad to supply these materials, as well as to develop synthesis and manufacture your specific products.

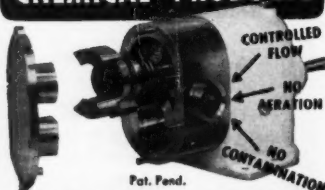
WRITE FOR PRICES  
AND TECHNICAL  
DATA SHEETS.  
DEPT. C. W.



**FINE  
ORGANICS Inc.**

211 East 19th Street, New York 3, N. Y.

**ACCURATE  
DELIVERY... for  
CHEMICAL PRODUCTS**



**WATEROUS PUMPS**

Flow settings on a WATEROUS Pump stay constant. Internal clearances are fixed... there is no metal to metal contact between rotors and housing. There is no aeration... no contamination of product. From start to stop, output volume stays the same.

Easy to take down and easy to clean, WATEROUS Pumps handle thin, viscous or semi-solid materials with equal ease.



Write for  
Complete  
Information,  
TODAY!

**WATEROUS COMPANY**  
80 EAST FILLMORE AVE.  
ST. PAUL 1, MINNESOTA

**SPECIALTIES . . . . .**

plunger-type dispenser to quicken turnover. It was tested in the Chicago area last year, is being tried again this month in Washington, Boston, Baltimore, and Albany. Dispenser (Calmer Co., Los Angeles) is like those sold with some hand lotions, is designed to eliminate the messy cap-measuring, now the housewife's main objection to liquid detergents. Babbitt offers 6-oz. Glim bottle, dispenser, and 5¢ coupon for 26¢ cash.

Another bid for the housewife's eye is Sinclair Co.'s selling Sprite in a 12-oz. bottle for about the same price as competitive 6-oz. containers. Rivals snort Sprite is that much less concentrated, have hardly deigned to recognize the Sprite approach.

But wily P&G, through its Hewitt Soap (Dayton) subsidiary, has been feeling out Eastern markets with a large bottle of Easy Day (10½-oz.) and a dispenser for 59¢.

Whether Sinclair, which introduced Sprite in 1948, and now distributes it in five Midwestern states, has started a swing to the large bottles, remains to be seen. Competitors have several choices: Ignore it (as they have been doing); offer twice as much for the same price (unlikely); or (more likely) reduce concentration to fill a larger container, and not boost price.

**Everybody Loves It:** But however it's sold, the housewife seems to go for the synthetic liquid detergent. With top-notch grease dissolving quali-



**House That Soap Built**

STAINLESS STEEL AND GLASS, twenty-four floors of it, make a new home for Lever Brothers on New York's Park Avenue. Called "Lever House," the \$6 million, air-conditioned structure is planned as a symbol of Lever products—of cleanliness. Heat-absorbing, blue Solex glass is used in the 1404 windows, which are permanently sealed—a construction feature that cuts building, air-conditioning, and cleaning costs. A special elevator for the building's exterior enables two men to Surf-scrub the windows and walls of the entire building in six days.

ties, the liquids practically sell themselves. Housekeepers like the rich suds, the dust-free qualities.

With the exception of relatively small-selling (as compared to the dishwashers) products like Drene and Halo shampoos, the synthetic liquid detergents got their start after the war. Lehigh Chemical tried Anderol as a side line in 1944 and in soap-short 1946, Antara decided to try one of its liquid detergents on the general consumer.

Glim, as Antara called its product, was introduced in a 4-oz., inverted bottle package. Originally non-ionic (condensation product of ethylene oxide and phenol), it sold moderately well. P&G jumped on the band wagon in 1948 with Joy, a high-sudsing anionic (largely an alkanolamine lauryl sulfate), and others popped on too.

**As You Wish:** Packaging and formulation of the detergents obeyed the housewife's wishes. Glim was made anionic to give the consumer-demanded suds. Perfume was added to mask the rather harsh chemical odor; easily gripped bottles were designed to prevent slippage in user's wet hands.

Admittedly, liquid synthetic detergents aren't as versatile as solids, and are promoted mainly for dishwashing. Some are labeled as good for washing nylons and woolsens; some even for washing automobiles.

**Who's Next:** As yet, P&G is the only one of the major soap companies in the field of liquid synthetic detergents. In addition to Joy, and Easy-Day, Hewitt puts out bulk detergent, too. Fels has about given up on Rol, has not yet marketed it. Colgate and Lever aren't committing themselves.

Though none of them approaches the sales of Joy or Glim, the smaller-selling products total up to a major portion of the market. Several specialties firms bottle liquid synthetic detergents under various labels—most of the chain stores offer their own brands, which admittedly don't sell as fast as Joy. And certain door-to-door tea companies are pushing their own brands with considerable success.

No matter how it's booming, the synthetic liquid detergents field is rough, and already more than one firm has faded out of the business.

**Black for Ball Points:** A black ink for ball point pens has been introduced by the B B Pen Co. (Los Angeles). Called B B Jet, it is claimed to be the only ballpoint pen ink which will photograph without filters.

B B is aiming for government usage (ink meets Federal Specifications

# NEWS ABOUT LAH\*

**\*(Lithium Aluminum Hydride)**

Of vital importance to all present and potential commercial users of LAH (Lithium Aluminum Hydride) is the news that LAH (Lithium Aluminum Hydride) purchased from Metal Hydrides, Inc., **may now be used without restrictions of a use license or payment of use royalties.**

This releases MH highly essential LAH for wider application. Stocks are ample — shipments will be prompt. For further information or technical bulletins write, wire or call



## METAL HYDRIDES

12-24 CONGRESS STREET • BEVERLY • MASS.

If you need a  
**Rare\*** organic in  
larger-than-laboratory  
amounts, write to

\*Glycerol  $\alpha, \gamma$ -Dichlorohydrin,  
for example



**Eastman Organic Chemicals Department, Distillation  
Products Industries, 789 Ridge Road West, Roch-  
ester 3, N.Y. (Division of Eastman Kodak Company).**  
There are more than 3500 regularly supplied East-  
man Organic Chemicals for science and industry.

Also... vitamins A and E... distilled monoglycerides... high vacuum equipment

## BORIC ACID, BORAX AND OTHER BORATES

### BORIC ACID

Technical U.S.P.  
Crystal  
Granular  
Powdered  
Impalpable

Special Quality  
Granular  
Powdered

#### Anhydrous Boric Acid

Borax  
Borax 5 Mol.  
Anhydrous Borax  
Borax Glass  
Ammonium Riborate  
Ammonium Pentaborate

Potassium Pentaborate  
Sodium Metaborate  
\*Anhydrous Rasorite  
\*Rasorite Special Concentrates  
\*Fertilizer Borates  
(Regular and High Grade)

### HERBICIDES

\*Borascu ®  
\*Borascu 44  
\*Concentrated Borascu

Polybor ®  
Polybor Chlorate 88

\*Sodium Borate Concentrates which offer economical sources of  
Sodium Borate for special applications.

Complete Information Samples and Bulletins on request

## PACIFIC COAST BORAX CO.

Division of Borax Consolidated, Limited

New York

Cleveland

Chicago

Los Angeles



TT-1-562) and for other work that must be photostated or micrographed. B B won't reveal the exact composition of its dye.

**Gout Out:** Benemid Probenecid, a new agent for treating gout, is now distributed nationally by Sharp & Dohme Inc. (Philadelphia). Chemically, it is p-(di-n-propylsulfamyl) benzoic acid.

**Antistatics with Sizes:** An antistatic agent, Lektrostat G Y, which also acts as a warp softener has been compounded by Dexter Chemical Corp. (New York), for use in gelatine sizing of synthetic fabrics

**Pennsalt in Portland:** Pennsalt of Washington, with works in Portland, Ore., has added production of B-K alkaline cleaners and bottle washing compounds. Previous supplies came from Pennsalt's Wyandotte, Mich., plant.

**Aerosol Ink:** Layout Ink, produced by Crown Industrial Products Co. (Sycamore, Ill.), is now being packaged in aerosol containers.

**Chalk Talk:** Fluorescent chalks, in six colors, have been introduced by Norco Products Mfg. Co. (New York).

**Sanitary Supplier:** Palmetto Chemical & Supply Co., Inc., Cheraw, S. C. has been organized (capitalized at \$25,000) to sell, compound, and distribute sanitary supplies.

**Tough Stuff:** BO 535, a new, low-bake synthetic finish sold by United Lacquer Mfg. Corp. (Linden, N. J.) is said to resist boiling water, alcohol, and similar ordinarily finish-damaging agents.

**Plantfood Plant:** Pay-Crop Fertilizer Co., Oklahoma City, Okla., has been recently organized; it is capitalized at \$100,000.

## Up on the Farm

To support claims to defense agencies for vital farm chemicals and pesticides, the USDA has just made a survey covering needs for 54 compounds. Gist of the survey: Overall, almost 9% more pesticides will be required this year compared to last; requirements for chlorinated pesticides are up 25%.

The survey covered insecticides, herbicides, fungicides, and defoliants. In addition to the increased demand for crop protectants like BHC (80



million pounds used last year, 95 million estimated for '52) aldrin, dieldrin, chlordane, and toxaphene (up 29% over last year, to a total of 91.5 million pounds) there is a boosted need for herbicides.

Weed killer 2,4,5-T requirements are put at 6 million pounds; 2.8 million sufficed last year. Overall, herbicides are up to 28 million pounds against previous need for 23.5 million.

Requirements for most of the older pesticides are fairly static. However, calcium arsenate needs jumped to 45 million from 39 million. Lead arsenate is one of the few to drop, down 1.5 million to 30 million this year (probably due to a lead shortage). Parathion requirements are up 49%.

The USDA points out that these quantities are merely the quantities needed to provide protection under conditions at least as severe as in the recent history of the particular pesticide. It doesn't mean that amount will be available. Farmers are urged to buy their chemicals as soon as possible.

### Dry Cleaner's Complaint

New synthetic fibers appearing in ever-increasing quantity, along with new sizings and finishes, have presented an expensive bill for professional dry cleaners. Puzzled on how to satisfactorily clean the new synthetics, New York Dry cleaners last week appealed to the Federal Trade Commission for help.

Specifically, the 750 New York State cleaners, claiming nationwide backing, asked that garment labels include the following.

- Percentage of new or synthetic fibers present.
- Presence of sizing or type of chemical finish.
- Directions for cleaning or laundering when new products are present.

Some new fibers, finishes, and weaves just can't be cleaned, the associations declare. And in many cases, misled by the feel and appearance of garments, dry cleaners have applied damaging chemicals.

Rayons finished with water-soluble sizes have been a particular trouble. "There is no known method by which the dry cleaner can possibly clean these garments satisfactorily," the associations say.

### PICTURES IN THIS ISSUE:

Cover (bottom) & pp. 40-41—Sharp & Dahme; p. 26—Wide World Photo; p. 32—Milton J. Lewis Photo; pp. 34-35—Canadian Industries Ltd.; p. 47—Lionel Crawford, McGraw-Hill Pub. Co.



## Stabilize your Emulsions with VEEGUM

Small amounts of VEEGUM effectively stabilize emulsions containing nonionic and anionic surface active agents. Less than 1% of VEEGUM permanently stabilizes many types of emulsions containing oils, fats, and waxes. VEEGUM also stabilizes emulsions containing significant amounts of electrolytes.

**SUSPENDING AND THICKENING:** VEEGUM provides complete suspension at lower viscosities than organic gums, or suspends more effectively at equal viscosities. Thixotropic characteristics add to thickening and suspending ability. In addition, VEEGUM maintains product consistency by thickening slightly with heat.

**EASILY PREPARED:** Effective dispersions of VEEGUM may be prepared by simple agitation with or without heat.

**PROPERTIES:** VEEGUM is purified Colloidal Magnesium Aluminum Silicate. Non-toxic and non-irritating, it is opaque, white, non-tacky, and non-gelatinous.

Expanded plant facilities are supplying VEEGUM to meet steadily increasing demands of the chemical industry. Write today for the complete VEEGUM story.

### R. T. VANDERBILT CO.

specialties  department

230 PARK AVENUE, NEW YORK 17, N. Y.

☐ Please send Veegum Bulletin C110

☐ Please send sample of Veegum

NAME \_\_\_\_\_

POSITION \_\_\_\_\_

(Please attach to, or write on, your company letterhead)

# Announcing Production of Esters...

by **Celanese**

## n-Propyl Acetate

latest in the Celanese Series  
of Industrial Solvents developed  
especially for Performance and Economy

N-propyl acetate is the first in a series of esters to be produced by Celanese. It is a medium boiling, low viscosity solvent with a pleasant odor and excellent bluish resistance. An economical replacement for such solvents as MIBK, butyl acetate-ethyl acetate combinations, and secondary butyl acetate, Celanese\* n-propyl acetate is now available in 90%-92% concentration—in volume quantities to meet both large and small scale requirements.

With the addition of n-propyl acetate, Celanese can now offer a diversified line of organic solvents, providing formulators with the flexibility and economy of split shipments in compartmented tank trucks and cars at bulk prices.

Investigate the cost-saving possibilities of n-propyl acetate. A Celanese technical representative will be glad to review your formulations, and demonstrate how Celanese solvents

can give you the performance you need. Write for technical bulletin N-29-1.

Celanese Corporation of America, Chemical Division, Dept. 652-D, 180 Madison Avenue, New York 16, N. Y.

### Properties

Color . . . . . 15 APHA  
Spec. Grav. . . . . 0.880—0.885 @ 20/20°C  
Boil. Pt. . . . . 95°C—103°C  
Ester Content . . . 90%—92%

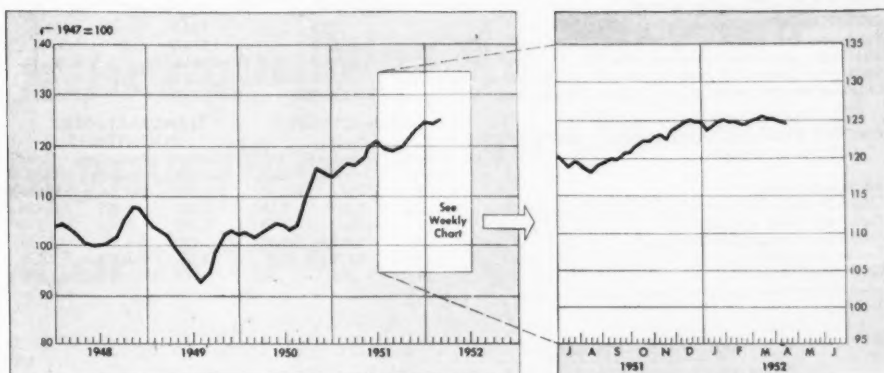
### Solvents by Celanese

Solvent 203	Acetone
Solvent 301	Methanol
Solvent 601	n-Propyl Acetate
Solvent 901	Butyl Alcohols



\*Reg. U. S. Pat. Off.

# MARKETS . . . . .



CW Index of Chemical Output-Basis: Total Man Hours Worked in Selected Chemical Industries

## MARKET LETTER

Washington was still taking dry swallows last week before plunging in: It wanted to lift some price controls, said it would, but didn't appear to know how to go about it.

Among materials on which OPS indicates it is willing to suspend controls are some edible oils such as soybean, linseed, corn and cottonseed; and inedible tallows and greases.

These have been selling below established ceilings, so the effect on market prices would be nil. But it would free producers of a lot of irritating red tape.

Holding up the parade is an agreement between OPS and the Senate Banking Committee. OPS won't budge until the Committee approves its decontrol plan; the Committee is waiting to see how the steel dispute comes out.

When this limited decontrol comes—and more commodities will be added later—it will be just a "suspension." OPS will clamp down again if prices nudge the old ceiling. It will, that is, unless Congress, tired of the control headache, makes new rules of its own.

But industry is finding that the habits of the past year and a half have left their mark on it too.

Some buyers are reluctant to pick up chemicals at prices shaded from the market level. Reason: They are afraid not to appear on their regular supplier's invoices for even a month, want to be sure of a friend "just in case something happens."

Commented one reseller this week: "It looks as though no one can recognize a bargain any more."

Notwithstanding some relaxation of controls, the planners were still hard at work last week. And industry liked some of what they did.

OPS allowed manufacturers of paints and pastes containing over 60% lead and zinc to pass on increases—up to 2 cents a pound—resulting from higher costs of the metals. This is the first application of a "product standard," OPS's method to permit an industry, making an overall profit, but losing on some products or lines, increases to bring the lines up to the break-even point.

Superphosphate producers are scheduled for similar relief.

## MARKET LETTER

### WEEKLY BUSINESS INDICATORS

	Latest Week	Preceding Week	Year Ago
CHEMICAL WEEK Output Index (1947=100)	123.5	124.0	119.8
Bituminous coal production (daily average, 1000 tons)	1,363.0	1,537.0	1,661.0
Steel ingot production (thousand tons)	2,085.0	2,038.0 (R)	2,065.0
Stock price index of 14 chemical companies (Standard & Poor's Corp.)	227.9	232.7	235.5
Chemical process industries construction awards (Eng. News-Record)	\$14,616,000	\$11,573,000	\$9,852,000

### MONTHLY BUSINESS INDICATORS—TRADE

Millions of Dollars	MANUFACTURERS' SALES			MANUFACTURERS' INVENTORIES		
	Latest Month	Preceding Month	Year Ago	Latest Month	Preceding Month	Year Ago
All Manufacturing	\$23,267	\$22,512	\$22,261	\$42,079	\$42,206	\$34,657
Chemicals and allied products	1,604	1,518	1,590	3,001	3,005	2,424
Paper and allied products	671	691	681	1,055	1,022	779
Petroleum and coal products	2,042	1,958	1,832	2,470	2,522	2,196
Textile products	1,139	1,139	1,351	2,665	2,774	2,710
Leather and products	219	203	337	547	573	590

Defense Production Administration unveiled 1955 production goals for three more chemicals: ethylene glycol, ethylene oxide, carbon black.

Target capacity (with increases over Jan. 1, 1951): glycol, 850 million pounds, up 327 million; ethylene oxide, 969 million pounds, up 423 million; carbon black, 2,320 million pounds, an 800-million pound boost.

NPA also amended the cryolite conservation order, is requiring all users to report by the end of the month their stocks, receipts, and consumption, as well as end use for which the cryolite was purchased.

The objective: To get basic data to decide whether complete allocation—originally planned for May—is necessary.

But NPA's big action was decontrolling both synthetic and natural rubber—with one exception. The Government will still retain its role as owner of the GR-S industry for another year, maybe two. For Congress is about to extend the basic rubber law expiring in June.

Controls will be slapped back on, however, if and when consumption of synthetic drops below these levels: GR-S, 450,000 long tons per year; butyl, 60,000 long tons per year. Present consumption is running well above these rates.

Consumption floor was set at a point to keep all petroleum butadiene plants operating at 75% capacity.

But alcohol butadiene plants are being slowed down. Plant at Kobuta, Pa., is now running at 50% capacity; Louisville plant will soon be down to 66%. RFC has enough alcohol bought and contracted for to last to the end of the year.

By that time, it's expected that the alcohol-based plants will be closed down, and put in stand-by status.

How hard the textile slump is hitting was shown by Celanese Corp.'s halting production of cellulose acetate flake at its three acetate yarn plants (Cumberland, Md., Narrows, Va., and Rock Hill, S. C.). But the company is still turning out yarn at these locations.

Celanese aims to cut down on acetate flake inventories, thinks the move will strengthen the acetate market. The company is not as pessimistic as some, feels that the textile market is "showing a better sentiment."

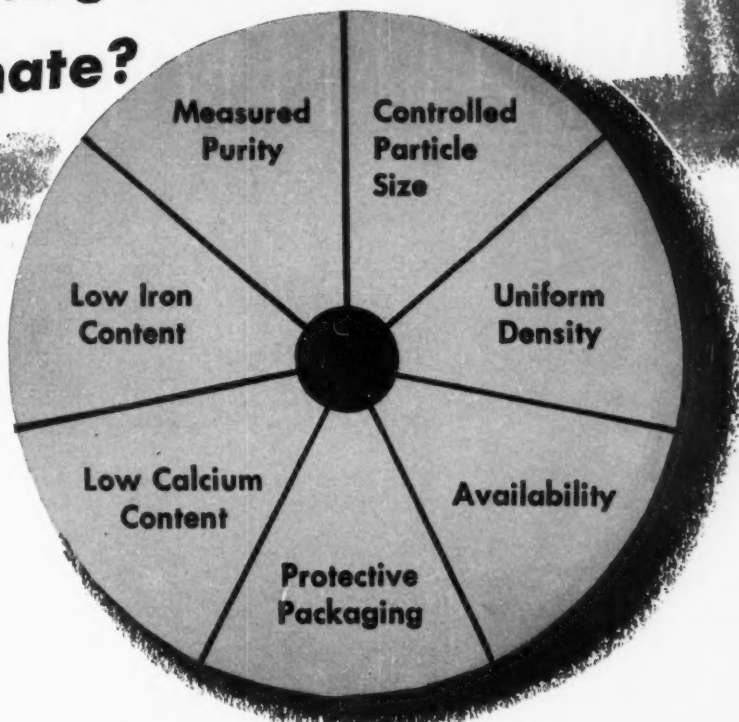
### SELECTED CHEMICAL MARKET PRICE CHANGE—Week Ending April 19, 1952

UP	Change	New Price	Change	New Price
Candelilla, ref.	\$.01	\$.78		
DOWN				
Quicksilver, 76 lb. flask	5.00	203.00	Shellac, bleached, bone dry	\$.01 \$ .51

All prices per pound unless quantity is stated



# What qualities do you want in your Magnesium Oxide and Carbonate?



**H**ow many of these qualities are vitally important to you? You get all seven—when you buy Baker's Magnesium Oxide and Carbonate.

If you react Magnesium Oxide or Magnesium Carbonate chemically, or if your final product must meet predetermined specifications, you will be interested in Baker's measured purity typified by the low iron and calcium content of these two fine chemicals.

If you formulate either of these compounds into dry or wet mixtures, the controlled particle size and density will enable you to achieve a uni-

form final product. This helps to simplify both your manufacturing and packaging problems.

Baker's protective packaging assures you that these chemicals will arrive at your point of use in good condition. Long experience in cooperating with users of Baker's Magnesium Oxide and Carbonate indicates that all seven of Baker's features are both important and essential.

So write for free testing samples and make your comparison. We will gladly quote prices. Address: J. T. Baker Chemical Co., Executive Offices, Phillipsburg, New Jersey.



**Baker Chemicals**

REAGENT • FINE • INDUSTRIAL

*facts* you may want to know about—

# Mallinckrodt

1500 fine  
chemicals

Synthetic  
organic  
products

Inorganic  
products

Precision  
processing

Since its founding in 1867, Mallinckrodt has concentrated its attention on the quantity production of fine *inorganic* and *organic* chemicals in standard and custom grades. It now supplies some 1500 products, for industrial, photographic, analytical and medicinal uses.

Mallinckrodt is one of the nation's leading producers of synthetic theophylline and phenobarbital, and is a major manufacturer of ether for anesthesia, cyclopropane, natural and synthetic alkaloids, and organic iodine compounds such as Urokon.® Mallinckrodt also manufactures an extensive line of metallic soaps, such as aluminum, calcium, magnesium and zinc stearates, for industrial purposes.

Typical of its inorganic manufactures are the chemicals required for the production of fluorescent lamp and television tube phosphors, such as silicic acid, calcium phosphate, calcium carbonate, and magnesium oxide. Mallinckrodt's "Standard Luminescent" grade of these and other products has won wide acceptance in the electronic industry.

Mallinckrodt has long been a prime producer of mercury salts, bismuth salts, silver salts and iodides.

Mallinckrodt chemists and production men have demonstrated special talents for producing to unusual chemical and physical specifications, in tonnage quantities.

#### MALLINCKRODT CHEMICAL WORKS

Mallinckrodt St., St. Louis 7, Mo. • 72 Gold St., New York 6, N. Y.  
Chicago • Cincinnati • Cleveland • Los Angeles • Montreal • Philadelphia • San Francisco

ORGANIC INTERMEDIATES •  
INORGANIC CHEMICALS •  
CHEMICALS FOR ELECTRONIC  
USES • METALLIC SOAPS •  
ANALYTICAL REAGENTS •  
PHOTOGRAPHIC CHEMICALS •

*Mallinckrodt*®

MANUFACTURERS OF FINE  
CHEMICALS FOR INDUSTRY •  
SINCE 1867 •

FOR FINE  
INDUSTRIAL CHEMICALS—  
FOR PRECISION  
CHEMICAL PROCESSING  
THINK OF

*Mallinckrodt*  
FIRST!

## Expanding with Gas

Market for gas odorants is expanding with increasing home consumption of natural gas, government regulations requiring odorization.

Odorants for natural gas and LPG are now a \$1.5-2 million business, should exceed \$2.5 million by 1955.

As natural gas for home consumption goes, so goes the market for gas odorants. And natural gas has been going strong with this result: Odorizing natural gas and LPG is now a \$1.5-2 million business that should exceed \$2.5 million by 1955.

In 1951 about 1 million new consumers received odorized natural gas, swelling the total to over 25 million. Consumption of odorized natural gas and LPG was conservatively estimated at 1,700 billion cu. ft. and 3 billion gal., respectively, a market for a minimum of 2 million pounds of odorants. This represents a 17% increase over 1950, 25% over 1939, and 2230% over 1928 when odorants were first marketed in this country.

Sharing this business are three principal companies: Oronite Chemical Co., Sharples Chemicals and Natural Gas Odorizing Co. of Houston (which has just become a wholly-owned subsidiary of American Research and Development Corp., Boston). Oronite, largely because of its dominant position west of the Rockies, is number one, with relative newcomer (1942) Natural Gas Odorizing giving Sharples a run for second place. Manufacturers of ethyl mercaptan, used for LPG odorizing, are the only other factors in the field.

**Safety in Smell:** This specialized facet of the chemical industry got its start in the late 'twenties when natural gas began to replace manufactured gas in the Southwest and in Southern California. Whereas manufactured gas has a distinctive odor, natural gas is usually odorless. Containing no carbon monoxide (toxic component of manufactured gas), it is not poisonous, but it is highly explosive; air-gas mixtures containing natural gas in concentrations as low as 4% will explode violently.

So for safety and economy (in detecting small leaks), natural gas has to be odorized when destined for home use.

Ideally a gas odorant should (1) have a "gassy" or disagreeable odor, preferably the former, that will not cause odor fatigue; (2) be neither toxic nor corrosive; (3) be retained by the gas and not absorbed by water, mains or meters; (4) burn completely with-

out odorous or harmful products of combustion which might foul pilot lights; (5) have high chemical, thermal and pressure stabilities; (6) be inexpensive and readily available; and (7) have a low threshold value—be recognizable in gas concentrations of less than 1%.

No one odorant has been made to meet all these requirements. At least a workable compromise has to be reached where one characteristic is sacrificed for another, depending on local use. In general, all products on the market today are basically either natural or synthetic mercaptans or cyclic sulfides.

**Started with Cyclics:** Pioneer in the industry was Standard Oil of California, whose work in the field has been taken over by its chemical subsidiary, Oronite. In 1927-29, Standard developed a cyclic sulfide, named Calodorant; essentially the same product is still on the market.

Shortly thereafter, Sharples Chemicals came in with Pentalarm, a synthetic amyl mercaptan. The company quickly carved out a substantial niche in the business, and today its Pentalarm series of products is still based on amyl as well as other lower mercaptans.

Natural Gas Odorizing, largest independent manufacturers of malodorants (CW, Aug. 11, '51), placed Captan, basically an ethyl mercaptan, on the market in 1942. It has grown considerably since (estimated sales for 1951 approached 1 million pounds), has developed an oxidation-resistant compound said to be superior to ethyl mercaptan.

Standard (or Oronite), which during these years marketed Calodorant and Alert, an ethyl mercaptan developed originally for LPG, has not stood still either. As cities began to expand around odorization stations placed initially around their perimeters, Calodorant's dilute nature proved a handicap. For it required large storage tanks and frequent handling. Also its vaporization properties do not permit proper odorization at the high pressures used in transcontinental transmission line.

To meet these changes, Oronite developed a concentrated cyclic sulfide,

## EL DORADO



### FATTY ACIDS For Particular Users

#### MYRISTIC ACID

Myristic.....	90.0% min.
Lauric & Palmitic.....	9.5% max.
Moisture.....	0.5% max.
Unsaponifiable.....	0.3% max.
Acid Number.....	239-246
Saponification Number.....	241-248
Titre °C.....	50.5 min.
Iodine Number (Wijs).....	.7 max.
Color, Lovibond	
5 1/4".....	8 Y/1.5 R max.

#### OTHER EL DORADO PRODUCTS

FATTY ACIDS	METHYL ESTERS
CAPRYLIC	CAPROATE
CAPRIC	CAPRYLATE
LAURIC	CAPRATE
MYRISTIC	LAURATE
COCONUT MIXED	MYRISTATE

ALSO 90+ GLYCERIN

**EL DORADO**  
SINCE 1892  
**OIL WORKS**

311 CALIFORNIA STREET  
SAN FRANCISCO - CALIF.

**Why Shout  
"HELP WANTED"  
...When  
the Help You Need  
May Be at Your  
FINGERTIPS?**

Yet many concerns do not realize that the best source of trained help may lie right within their own organizations.

The answer is simple. Release your technical men from routine testing jobs. Give them the promotions they earnestly desire . . . give them responsibility . . . put them where their talents and training are used at full potential.

Let's get together and discuss this matter. You may find your "help wanted" problems well on their way to solution . . . and at savings to you!

Established 1880  
1670 Park Avenue, Hoboken, N. J.  
PHILADELPHIA • BOSTON • PROVIDENCE  
CHICAGO • NEW YORK • LOS ANGELES  
MEMPHIS • DENVER • DALLAS  
Member of American Council of Commercial Laboratories

Calodorant C, that would not condense at high pressures. Southern California Gas Co., which tested it prior to its being marketed in 1949, found that the new product, because of its minute sulfur content, cut down on pilot light failures considerably. (Such failures can usually be traced to corrosion caused by combustion products of residual sulfur in gas and/or odorant.) Although its cost is higher than Calodorant's—about ½ lb. at \$1.40 is required per million cu. ft.—savings in freight, storage handling and maintenance make the new odorant competitive. Oronite expects sales of Calodorant, Calodorant C Special (blend of Calodorant and Calodorant C to fit odorizing systems not yet adapted to concentrate use) and Alert to drop in favor of Calodorant C.

Cyclic sulfides are chemically stable; mercaptans have greater odor strength but are readily oxidized to odorless disulfides in presence of oxygen and iron oxide. Although oxidation inhibitors are used, a common complaint is that while they prevent odor fading in storage, they fail to perform efficiently when odorants are vaporized in the line. Also, mercaptans cause odor fatigue and are highly absorbed by clothing, drapes, etc.

**Area of Accord:** Undoubtedly, companies making odorants will supply what the market demands. Although not everyone in the industry is as yet in agreement on what type that may be, all do agree that the market is growing.

The Chicago area has been the largest single market for odorants—consuming about ¼ million lb. per year—but natural gas reached New England last September, and Eastern areas should pass Chicago in the next few years. The Northwest is now the only heavily populated area in the country without natural gas.

Mandatory odorization of all natural gas used last year would have affected industrial users as well as household consumers, would have raised the total odorized to 4.283 billion cu. ft. At this rate odorization would be a \$5 million business by 1955. But a more realistic volume by that date is something in excess of \$2.5 million, enough to keep everybody content.

Bid Closing	Invitation No.	Quantity	Item
Aviation Supply Office, 700 Robbins Ave., Apr. 29	B54284B	266,000 gal	Philadelphia, Pa Vinylindene resin, saran solution pigmented, Bureau of Ships formula 113/49
Commanding Officer, New York May 7	NY Chemical Procurement District, 180 Varick St., New York 14, N.Y.	518,900 lb	Caustic potash, technical, 83-86%, nut size in 100 lb. drums
General Services Administration, Apr. 28	630 Sansome St., San Francisco, Calif. SF-477	1,100 gal 36 gal 2,747 gal	Enamel, interior, gloss, Fed. spec. TT-E-506B Lacquar, spraying, Fed. spec. TT-L-58 Paint, Fed. specs. TT-P-25A, TT-P-47A, TT-P-51B, TT-P-102, TT-P-91A, TT-P-141, TT-P-266 Thinner, Fed. specs. TT-T-291A, TT-T-296
Chief, Procurement Division, Apr. 29	Supply Service, 5-219	699,700 lb	Veterans Administration, Washington 25, D.C. Dishwashing compounds
Aviation Supply Office, 700 Robbins Ave., May 2	Philadelphia, Pa. 54285B	20,000 gal 150 gal 2,550 pail 885 ats 300 gal	Enamel, gloss, synthetic, spec. TTE 489 amend 1, spec. TTE 506B, amend 1 Lacquar, spraying, pigmented, spec. TT P 58 Paint, various types, spec. TT P 56A, spec. TT A 468U amend 1, spec V 81B Pigment in oil, various types, spec. TT P 381 A Varnish shellac, spec. TT V 918 amend 1



# tracers...

to opportunities in the  
Chemical Process Industries

REPLIES (Box No.): Address to office nearest you  
NEW YORK: 330 W. 42nd St. (36)  
CHICAGO: 530 N. Michigan Ave. (11)  
SAN FRANCISCO: 68 Post St. (4)

## MANAGEMENT SERVICES

### Evans

Chemical Research—Processes—Products  
Development Problems  
Complete Laboratory—Pilot Plant  
Mechanical & Optical Sections  
Ask for new Scope Sheet C  
Listing over 100 of our activities

EVANS RESEARCH & DEVELOPMENT CORP.  
250 East 43rd St., N. Y. 17, N. Y.

## EMPLOYMENT

### Positions Vacant

#### Latin American Service

We are looking for a man capable of heading a Latin American chemical plant after a training period in our factory. Give complete information on education, experience, earnings, responsibilities, references, etc.

P 4021 CHEMICAL WEEK  
330 W. 42nd St., New York 36, N.Y.

Wanted: Chemist interested in colloidal dispersements and emulsions for work in small Ohio manufacturer's lab. P-3985, Chemical Week.

### Selling Opportunity Offered

#### Chemical Salesmen

Nationally known organic chemical manufacturer needs two salesmen possessing 8 years or more sales or industrial experience and a degree in chemistry or chemical engineering. One man will be assigned to the New York-lower New England area and the other will work in Ohio and adjacent states. Our employees know of this ad. If you think you are the man we want, send resume and photo to

SW 3978 Chemical Week  
330 W. 42nd St., New York 36, N.Y.

### Position Wanted

#### Sales . . . Advertising . . . Public Relations

EXECUTIVE with broad spread of 18 years experience in sales, advertising and publishing. Qualified to direct and coordinate sales activities; plan and execute advertising programs; and build sound public relations.

Presently employed at five figure salary . . . but seeking new horizons with a progressive organization. Successful as an administrator and coordinator of creative efforts. Age 41.

PW 3394 Chemical Week, 330 W. 42 St., N.Y. 38.

Aggressive sales organization in Philadelphia desires another line, preferably in the chemical raw materials field, to handle in this territory. Established over 25 years. Have developed good buyer contact. RA-3930, Chemical Week.

Sales Representation. Will call on principal Government Buying Offices in the East Confer Procurement Officers Assist with Specifications. RA-4013, Chemical Week.

U.S. Manufacturer of chemical specialties and dye stuffs, with salesmen in Ontario and Quebec, office, clerical staff, laboratory, and warehouse in Montreal, wishes to become Canadian representative and distributor for an additional line. RA-3997, Chemical Week.

## EQUIPMENT — used — surplus

### For Sale

Absorption Column 5'x38"x3/4" ASME. Heat & Power Co., Inc. 70 Pine St., N.Y. 5.

Absorption Column 11'6"x58"x3/4" ASME. Heat & Power Co., Inc. 70 Pine St., N.Y. 5.

Absorption Column 5'x47"x3/4" ASME. Heat & Power Co., Inc. 70 Pine St., N.Y. 5.

Autoclaves, stainless steel type 347, 100 gal., jkt. & agtd. Chemical & Process Machinery Corp., 146 Grand St., New York 13, N.Y.

Calendars, New Rubber Calendars, 6x12", Johnson Joints, 7 1/2 HP motor. Complete. Eagle Industries, 108 Washington St., NYC.

Centrifugals, Bird Rubber Covered. First Machinery Corp., 157 Hudson St., N.Y. 13, N.Y.

Centrifuge; Sharples Super S/S. First Machinery Corp., 157 Hudson St., N.Y. 13.

Condensers, Coil, St. 40 sq. ft. Perry Equip., 1415 N. 6th St., Phila. 22, Pa.

Disintegrator, Rietz 18 S/S; 30 H.P. First Machinery Corp., 157 Hudson St., N.Y. 13.

Dryer; Double Drum; 28' x 5'. First Machinery Corp., 157 Hudson St., N.Y. 13.

Dryer, Flaker, & Barrel Packer. Dytex Chemical Co., 140 India St., Prov., R.I.

Dryer, Roto-Louvre 17'6"x35". Heat & Power Co., Inc. 70 Pine St., N.Y. 5.

Dryer, Vacuum shelf, 20 shelves, 59 x 78", pump, condenser, 3. Consolidated Products, 18 Park Row, N.Y. 38.

Dryer, Vacuum Shelf, 44"x44" shelves, MD pumps, complete. Eagle Industries, 108 Washington St., NYC.

Dryers, 2 Bfvc 32x90 dbl. drum, SS accessories, complete. Eagle Industries, 108 Washington St., NYC.

Dryers, Stainless Drum 5'x10'. First machinery Corp., 157 Hudson St., N.Y. 13, N.Y.

Filter Alsop, SD-12-WR-30,7316, ST. ST. Perry Equipment Co., 1415 N. 6th St., Phila. 22, Pa.

Filter #7 Sweetland 2' spaces 28 leaves. Heat & Power Co., Inc. 70 Pine St., N.Y. 5.

Filter, Sweetland #12, 36 leaves. Perry Equipment Co., 1415 N. 6th St., Phila. 22, Pa.

Filter Press, 30"x30", aluminum, 45 chambers, Consolidated Products, 18 Park Row, N. Y. 38.

Filter Press, 30"x30", Iron, Shriver and Johnson, 35-40 chambers, 6. Consolidated Products, 18 Park Row, N. Y. 38 Barclay 7-0600.

Filter Presses, all sizes and types. Process Industries, 305 Powell St., Brooklyn 12, N.Y.

Heat Exchangers, Braun 1035 sq. ft. 250 PSI WP. Heat & Power Co., Inc., 70 Pine St., N.Y. 5.

Heat Exchangers, Whitlock, vert. 3463 sq. ft. Heat & Power Co., Inc., 70 Pine St., N.Y. 5.

Kettle, Reaction, 12 gal. Inconel, jkt. & Agit. Perry Equip., 1415 N. 6th St., Phila. 22.

Kettles, Dopp C.I. 200 to 650 gal. First Machinery Corp., 157 Hudson St., N.Y. 13.

Kettles, S/S, 300 gal. and 200 gal., 100#, WP. Consolidated Products, 18 Park Row, N.Y. 38.

Mill, Ball Hardinge 4 1/2'x2'. Perry Equipment Co., 1415 N. 6th St., Phila. 22, Pa.

Mill, New Rubber Mills, 6x12, 6x14, 6x16"; Johnson Joints, Complete. Eagle Industries, 108 Washington St., NYC.

Mill, Pebble, 32"x36", Porc. lined. Perry Equipment Co., 1415 N. 6th St., Phila. 22, Pa.

Mixer, Lab, BP Vacuum, 7 1/2 gal. jkt. MD. Complete. Eagle Industries, 108 Wash. St., NYC.

Mixer-Simpson Intensive Size "0" 3' Unit. Equip. Clearing House, 289 10 St., Bklyn 15.

Mixers, AMF, Glen, 340 qt., 160 qt. & 120 qt. S/S bowls & beaters, AC motors, 4. Consolidated Products, 18 Park Row, N.Y. 38.

Mixers-2-7500 lb. dry powder, double ribbon type. Chemical & Process Machinery Corp., 146 Grand Street, New York 13, N.Y.

Pebble Mills; 8'x8', Porcelain lined. First Machinery Corp., 157 Hudson St., N.Y. 13, N.Y.

Pebble Mills 10 gal. to 800 gal., porcelain lined, 20. Consolidated Products, 18 Park Row, New York 38.

Pumps, Stokes High Vacuum, 212C, Water cooled, 100 CFM, unused, guaranteed, limited quantity, reasonable prices. American Sales Co., 67 E. 8th St., NYC. GR 3-1465.

Tablet Press, Stokes R, single punch, Consolidated Products, 18 Park Row, N.Y. 38.

Tank, New 20,000 Gal. Cap. 5/16 Steel 6 available. L. M. Stanhope, Rosemont, Pa.

Tank, S/S, 3,000 gal. for truck. Perry Equipment, 1415 N. 6th St., Phila. 22, Pa.

Tank, 3700 gal., S/S, Horiz., New. Perry Equip., 1415 N. 6th St., Phila. 22, Pa.

Tanks, SS, from 180-10000 gal. jkt. storage, agtd. Eagle Industries, 108 Washington St., NYC.

Tanks, 4500 gal. capacity, steel storage, recovered from dismantled tank cars, cooled & non-coiled. Marshall Railway Equipment Corp., 50 Church St., N.Y. 7, N.Y.

Tanks, S.S. Storage & Mixing, all capacities. Process Industries, 305 Powell St., Bklyn 12.

### Wanted

Machinery, Chemical and Process. Everything from single item to complete plant. Consolidated Products, 18 Park, N.Y. 38.

### Wanted at Once

Chemical Equipment for Defense Plant Work  
Autoclaves  
Centrifuges  
Dryers  
Filters  
Tanks

Interested in complete plants—either now operating or idle. Give full particulars when writing.  
W 3117 Chemical Week  
330 W. 42nd St., N.Y. 36, N.Y.

## DEALERS in used—surplus

### Consolidated Products Co., Inc.

Oldest and Largest Dealers  
in Used and Rebuilt Machinery.

18 Park Row, New York 38, N. Y.  
Barclay 7-0600

Shops: 331 Doremus Ave., Newark 2, N. J.

### Your FIRST Source

NEW YORK'S  
LARGEST STOCK  
RENTAL-PURCHASE PLAN  
FIRST MACHINERY CORP.  
157 Hudson St., N. Y. 13  
Phone WORTH 4-5986

### R. Gelb & Sons, Inc.

Largest stock of used chemical  
equipment in the United States.  
66 Years of Leadership  
R. Gelb & Sons, Inc.  
Union, N. J.  
UNIONVILLE 2-4900

## CHEMICALS

### Biuret, Tech.

(Approx. 90% pure)

Large quantities over extended period. Write

FS4031 Chemical Week  
330 W. 42 St., New York 36, N.Y.

Ethylene, Propylene Glycol, Carload or less, prompt  
Tobey Chemical Co., 1480 B'way, N.Y.C.

### Wanted

### Chemical Service Corporation

WANTED — SURPLUS  
Chemicals, Plasticizers, Solvents  
Drugs, Pharmaceuticals, Oils  
Pigments, Colors, Waxes, etc.  
CHEMICAL SERVICE CORPORATION  
96-02 Beaver Street, New York 3, N. Y.  
HANOVER 2-6970

Diphenylamine, Refined, duPont—Any quantity,  
Southside Chem. Co., Inc., Petersburg, Va.

## PLANTS — PROPERTIES

### Wanted to Rent

Baltimore — Washington Area

2000-4000 sq. ft. of laboratory and office space.  
Would consider light manufacturing area.

Box 248, Adams, Mass.

# BOOKS . . . . .

## Chemicals

### Lithium Hydroxystearate

Technical service bulletin covering the characteristics and uses of Lithium hydroxystearate, a metallic soap finding application as a gelling agent in the manufacture of synthetic and multi-purpose greases. Witco Chemical Co., 295 Madison Ave., New York, N.Y.

### Organic Laboratory Chemicals

24-p. 1952 catalog listing prices of firm's organic laboratory chemicals, which are available in three grades—reagents (highest purity), practical (purified), and technical (commercial). Eastern Chemical Corp., 34 Spring St., Newark, N.J.

### Chemicals

6-p. price list covering the firm's line of chemicals. Additional price data is given on perfuming and aromatic chemicals as well as color chemicals, mineral colors and purified mineral colors. R. F. Revson Co., 243 West 17 St., New York, N.Y.

### Synthetic Waxes

16-p. catalog of the firm's line of synthetic waxes, covers physical properties, specifications and use data for such applications as coatings, lubricants, anti-tack agents, electrical insulants, drawing com-

pounds, flattening agents, adhesives, etc. Glyco Products Co., Inc., 26 Court St., Brooklyn, N.Y.

### Germicides and Fungicides

Loose-leaf folder on the "Dowicide" line of germicides and fungicides for mold and bacteria control, describes physical and chemical properties of the compounds as well as typical applications employed in such industries as paint, leather, adhesives, disinfectants, textiles, paper, etc. The Dow Chemical Co., Midland, Mich.

## Equipment

### Pneumatic Conveyors

24-p. bulletin giving engineering and application data on the use of pneumatic conveyors in dealing with bulk materials-handling problems. Specific case history studies outline the advantages of the firm's methods as utilized in the chemical, food, plastics, water purification, breweries, petroleum, and wood pulp and paper industries. Dracco Corp., Harvard Ave. and East 116th St., Cleveland, Ohio.

### Temperature Controls

12-p. catalog describing the construction features, operation, specifications, operating temperatures, and applications of the firm's line of temperature controls. In-

cluded are tables of application and performance data. Burling Instrument Co., 5 Vose Ave., South Orange, N.J.

### Pumps

8-p. bulletin detailing design features, operating characteristics and dimensions of paper-stock pumps built to handle high consistency pulp and heavy liquors encountered in the paper industry as well as corrosive liquids with suspended solids found in the brewing, distilling, and chemical industries. Allis-Chalmers Mfg. Co., Milwaukee, Wis.

### Infrared Analysis

8-p. booklet entitled, "Product Control Through Infrared Analysis," recounts case histories of how six chemical concerns applied infrared analysis to process control problems such as penicillin G assay, detection of water in Freon, gamma isomer content of benzene hexachloride, etc. Perkin-Elmer Corp., Norwalk, Conn.

### Metallic Packings

8-p. catalog of firm's line of flexible metallic packings presents descriptions, service recommendations and details on sizes, standard packages and weights for various types of metallic packings. Raybestos-Manhattan, Inc., Manheim, Pa.

## CHEMICAL WEEK • ADVERTISER'S INDEX • APRIL 26, 1952

ADVANCE SOLVENTS & CHEMICAL CORP. 27  
Agency—Asher-Godfrey & Franklin, Inc.  
AMERICAN-BRITISH CHEMICAL SUPPLIES, INC. 6  
Agency—Richard Lewis, Advertising  
AMERICAN MINERAL SPIRITS CO. 720  
Agency—Leo Burnett Co., Inc.  
AMERICAN POTASH & CHEMICAL CORP. B44  
Agency—Charles W. Curtis, Advertising  
ARNOLD HOFFMAN & CO., INC. B23  
Agency—George T. Metcalf Co.  
ATLAS POWDER CO. 19  
Agency—The Altman-Kynett Co.  
BAKER CHEMICAL CO., J. T. 55  
Agency—Wildrick & Miller, Inc.  
BALTIMORE & OHIO RAILROAD 46  
Agency—The Richard Foley Advertising Agency, Inc.  
CARBIDE & CARBON CHEMICALS CO., A DIVISION OF UNION CARBIDE & CARBON CORP. T34  
Agency—J. M. Mathes, Inc.  
CELANESE CORP., OF AMERICA 52  
Agency—Ellington & Co.  
COMMERCIAL SOLVENTS CORP. 43  
Agency—Fuller & Smith & Ross, Inc.  
DAVIDSON CHEMICAL CORP., THE, 3rd Cover  
Agency—St. Georges & Keyes, Inc.  
DIAMOND ALKALI CO. 3  
Agency—Fuller & Smith & Ross, Inc.  
EASTMAN KODAK CO., INC. T30  
Agency—Charles L. Rumrill & Co., Inc.  
E. I. DUPONT DE NEMOURS & CO., INC. 45  
Agency—Batten, Barton, Durstine & Osborn, Inc.  
EL DORADO OIL WORKS 57  
Agency—Sidney Garfield & Assoc. Adv.  
EMPIRE TRUST CO. B34  
FILTROL CORP. 26  
Agency—Heintz & Co., Inc.  
FINE ORGANICS, INC. T48  
Agency—Sid N. Cottin Adv.  
GENERAL CHEMICAL DIVISION ALLIED CHEMICAL & DYE CORP. Back Cover  
Agency—Atherton & Currier, Inc.  
GLYCO PRODUCTS CO., INC. 35  
Agency—The House of J. Hayden Twiss  
GRAVER TANK & MFG. CO., INC. 9  
Agency—Simmonds & Simmonds, Inc.  
GUARANTY TRUST CO. OF NEW YORK 4  
Agency—Albert Frank Gromber, Law, Inc.  
HALL CO. THE C. P. 42  
Agency—Crutten & Eger, Advertising  
HARDESTY CHEMICAL CO., INC. 1  
Agency—Terrill, Belknap, Marsh Associates

HARTE CO., JOHN J. 29  
Agency—Moxley, George & Woolen, Advertising  
HOOKER ELECTROCHEMICAL CO. 5  
Agency—Charles L. Rumrill & Co., Inc.  
INTERNATIONAL PAPER CO. 25  
Agency—Picard Advertising Co.  
JEFFERSON CHEMICAL CO. 15  
Agency—Hazard Advertising Co.  
KAY-FRIES CHEMICALS INC. 6  
Agency—Richard Lewis, Advertising  
KARL KIEFER MACHINE CO. T16  
Agency—Julian J. Behr, Co.  
KEIDING PAPER PRODUCTS CO. T23  
Agency—Morrison Advertising Agency, Inc.  
KOPPERS CO., INC. B20  
Agency—Batten, Barton, Durstine & Osborn, Inc.  
MALLINGROD CHEMICAL WORKS 56  
Agency—The Philip Ritter Co., Inc.  
MC LAUGHLIN, GORMLEY KING CO. B24  
Agency—Alfred Colle Co.  
METAL HYDRIDES, INC. 40  
Agency—Tippett Jackson & Nolan, Inc.  
NATIONAL DISTILLERS CHEMICAL CO. 22  
Agency—The House of J. Hayden Twiss  
NATIONAL WATERPROOF PAPERS, INC. 36  
Agency—Lavenson Bureau of Advertising  
NATURAL PRODUCTS REFINING CO. 21  
Agency—Michel-Cather, Inc.  
NOPCO CHEMICAL CO. 26  
Agency—Loew, Williams & Saylor, Inc.  
OIL & CHEMICAL PRODUCTS, INC. T44  
Agency—Byrde, Richard & Pound  
OKLAHOMA PLANNING & RESOURCES BOARD 32  
Agency—White Advertising Agency  
PACIFIC COAST BORAX CO. B50  
Agency—Howard M. Irving & Associates  
PETROLITE CORP., LTD. 2  
Agency—John C. Fellows  
PITTSBURGH COKE & CHEMICAL CO. 37  
Agency—Walker & Downing, Advertising  
SINDAR CORPORATION T47  
Agency—Hazard Advertising Co.  
SOLVAY SALES DIVISION, ALLIED CHEMICAL & DYE CORP. 2nd Cover  
Agency—Atherton & Currier, Inc.  
STAUFFER CHEMICAL CO. 31  
Agency—The House of J. Hayden Twiss  
SUNDHEIMER CO., HENRY T24  
Agency—Giraudan Adv. Co.  
UNION CARBIDE & CARBON CORP., CARBIDE & CARBON CHEMICALS CO. T34  
Agency—J. M. Mathes, Inc.

U. S. POTASH CO. B18  
Agency—McCann-Erickson, Inc.  
U. S. TESTING CO., INC. 58  
Agency—Robert B. Grady Co., Adv.  
VANDERBILT CO., R. T. 51  
Agency—The Publication Services, Inc.  
VEGETABLE OIL PRODUCTS CO., INC. 10  
Agency—Mogge-Privett, Inc.  
WATEROUS COMPANY B48  
Agency—F. H. Faber Advertising  
WELCH, HOLME & CLARK CO., INC. B47  
Agency—Hydris, Richard & Pound  
WELSBACK CORP. 33  
Agency—The Philip E. Jones Co.  
WESTINGHOUSE ELECTRIC CORP. 38-39  
Agency—Fuller, Smith & Ross, Inc.

## ADVERTISING STAFF

ADVERTISING SALES MGR. . . . . B. E. Sawyer  
BUSINESS MANAGER . . . . . Albert E. Weiss  
Atlanta 3 . . . . . Ralph C. Maultsby, 1321 Rhodes-Haverty Bldg.  
Chicago 11 . . . . . Alfred D. Becker, Jr. Steven J. Shaw, 520 N. Michigan Ave.  
Cleveland 15 . . . . . Vaughan K. Dissette, 1510 Hanna Bldg.  
Dallas 1 . . . . . James Cash, First National Bank Bldg.  
Los Angeles 17 . . . . . Jos. H. Allen, 1111 Wilshire Blvd.  
New York 36 . . . . . Knox Armstrong, Robert S. Muller, Charles L. Todaro, 330 West 42 St.  
Philadelphia 3 . . . . . William B. Hannum, Jr., Architects Bldg., 17th & Sansom Sts.  
San Francisco 4 . . . . . Ralph E. Dorland, 68 Post St.  
Boston 16 . . . . . 1427 Statler Bldg.  
Detroit 26 . . . . . 856 Penobscot Bldg.  
Pittsburgh 22 . . . . . 738 Oliver Bldg.  
St. Louis 8 . . . . . 3615 Olive St., Continental Bldg.

## **DAVISON PRODUCES SPECIAL OXIDATION CATALYST**

**Yields Increased . . . Costs Lowered . . .  
Complete Restriction of Information**

For a two year period a manufacturer had worked on the problem of developing an oxidation catalyst for their own use. Their basic research was presented to a Davison Field Service Engineer as a laboratory prescription. This material was completely and confidentially coordinated with Davison's Technical Service and Research Departments. Pilot plant samples were manufactured enabling further research to be accomplished on the manufacture of the catalyst. Top men in the catalyst field worked on the development of this oxidation catalyst and after six months it was manufactured for large scale commercial use.

Because of Davison's modern facilities and extensive experience, the oxidation catalyst was produced at greatly reduced cost yet provided top yields. At no time was restricted information in danger of being divulged.

This is an example of how Davison's specialty catalyst development and production works. If you have a catalyst problem, contact the Davison Field Service Engineer. You can rely on Davison to work with you, confidentially.

Progress Through Chemistry

**THE DAVISON CHEMICAL CORPORATION**

Baltimore 3, Maryland

PRODUCERS OF: CATALYSTS, INORGANIC ACIDS, SUPERPHOSPHATES, PHOSPHATE ROCK, SILICA GELS, SILICOFLOURIDES AND FERTILIZERS

# GENERAL CHEMICAL



As a laundry sour



in manufacture of foam rubber



for water fluoridation

# SODIUM SILICOFLUORIDE

(98-99%  $\text{Na}_2\text{SiF}_6$ )



in glass and ceramics—  
flux and opacifier



for insecticides and  
mothproofing compounds

## READILY AVAILABLE

from convenient shipping points

Packed in  
100 lb. multiwall bags  
100 lb. fibre drums  
400 lb. fibre drums

BASIC CHEMICALS



FOR AMERICAN INDUSTRY

## GENERAL CHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 RECTOR STREET, NEW YORK 6, N. Y.

Offices: Albany • Atlanta • Baltimore • Birmingham • Boston • Bridgeport  
Buffalo • Charlotte • Chicago • Cleveland • Denver • Detroit • Greenville (Miss.)  
Houston • Jacksonville • Kalamazoo • Los Angeles • Minneapolis • New York  
Philadelphia • Pittsburgh • Providence • San Francisco • Seattle • St. Louis  
Yakima (Wash.)

In Wisconsin: General Chemical Company, Inc., Milwaukee

In Canada: The Nichols Chemical Company, Limited  
Montreal • Toronto • Vancouver